JOURNAL

OF THE

CEYLON BRANCH

OF THE

ROYAL ASIATIC SOCIETY.

VOLUME XV.

1897-1898.

BRITISH MUSEUM
NATURAL HISTORY

EDITED BY THE HONORARY SECRETARY.

The design of the Society is to institute and promote inquiries into the History, Religions, Languages, Literature, Arts, and Social Condition of the present and former Inhabitants of the Island, with its Geology and Mineralogy, its Climate and Meteorology, its Botany and Zoology.

COLOMBO:
GEORGE J. A. SKEEN, GOVERNMENT PRINTER, CEYLON.

1899.

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ERRATUM IN No. 48, 1897.

The coloured key to "Plan of *Sigirigala*" (summit) has been transposed. Area 1895 is correctly bordered in mauve on the Plan," and Area 1897 in pale pink.

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ERRATA.

Vol. XIV., No. 47, 1896, p. 257, *for* "decade" *read* "millenium."

Vol. XV., No. 48, 1897 :—The colouring key of "Plan of *Sigirigala*" (summit) has been transposed. Area, 1895, is correctly bordered in mauve on the "Plan," and Area, 1897, pale pink.

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ROYAL ASIATIC SOCIETY,

CEYLON BRANCH.

COUNCIL MEETING.

Colombo Museum, January 18, 1897.

Present :

Mr. Staniforth Green, Vice-President, in the Chair.

Mr. J. Ferguson.
Mr. C. M. Fernando.
Mr. P. Freüdenberg.
Mr. E. S. W. Senáthi Rájá.

Mr. J. Harward and Mr. G. A. Joseph, Honorary Secretaries.

Business.

1. Read and confirmed Minutes of Meeting of Council held on December 3, 1896.

2. Laid on the table a communication from the Lord Bishop of Colombo regarding an application by the Rev. J. F. X. Alvarez for permission to remove books from the Society's Library.

Resolved,—That the matter be left for the Secretaries to deal with : the Council being of opinion that the Rev. Mr. Alvarez should join the Society if he wishes to take books out of its Library ; but that, if he only desires to consult some one work, it may be issued to him.

3. Laid on the table a letter from the Hon. the Colonial Secretary covering a letter from the Secretary of the Geographical Society, Lisbon, regarding exchanges of Ceylon specimens, &c.

Resolved,—That the Government be informed that the carrying on of exchanges, as suggested, does not fall within the scope of the Society.

4. Laid on the table draft Annual Report of the Council for 1896.

On the motion of Mr. Ferguson, seconded by Mr. Fernando, it was resolved that the Report be adopted.

5. Resolved,—That Mr. Stanley Bois be asked to kindly audit the Society's accounts, and, failing him, that Mr. E. Booth be asked.

6. Considered question of nominating Office-Bearers for 1896.

Mr. P. Freüdenberg and Mr. F. M. Mackwood retire from the Council by seniority, and Messrs. H. F. Tomalin and P. Rámanáthan by reason of least attendance, under Rule 16.

Resolved,—That Messrs. Freüdenberg and Mackwood be re-elected; that Messrs. Rámanáthan and Tomalin be deemed to have retired from the Council; and that in their places Messrs. J. P. Lewis and F. H. de Vos be nominated; further, that the vacancy caused by Dr. H. Trimen's death be filled by Mr. A. Haly, Director of the Colombo Museum.

Resolved,—That the following Office-Bearers be nominated for 1897, viz.:—

President.—The Right Rev. the Lord Bishop of Colombo.

Vice-Presidents.—The Hon. Mr. Justice Lawrie and Mr. Staniforth Green.

Council.

Hon. P. Coomáraswámy.
Mr. J. Ferguson.
Mr. C. M. Fernando.
Mr. P. Freüdenberg.
Mr. A. Haly.
Mr. J. P. Lewis.
Mr. F. M. Mackwood.
Mr. F. H. Price.
Mr. W. P. Raṇasiṇha.
Mr. E. S. W. Senåthi Rájá.
Dr. W. G. Vandort.
Mr. F. H. de Vos.

Honorary Treasurer.—Mr. F. C. Roles.

Honorary Secretaries.

Mr. H. C. P. Bell, C.C.S.; Mr. J. Harward, M.A.; Mr. G. A. Joseph.

7. Resolved,—That the Annual General Meeting be held on Saturday, February 6, 1897, and the following be the business:—

(1) To read the Council's Annual Report for 1896.

(2) To elect Office-Bearers for 1897.

8. Laid on the table five Papers on "Ceylon Industries," by Mr. C. Perera Ekanáyaka.

(i.) "Siṇhalese Folklore: *Batala* Cultivation."
(ii.) "Paddy Cultivation."
(iii.) "Mat, Hat, and Bag Making."
(iv.) "Lace Making."
(v.) "Cabook Cutting."

Resolved,—That the Papers be referred to Messrs. C. M. Fernando and G. A. Joseph for their opinions.

ANNUAL GENERAL MEETING.

Colombo Museum, February 6, 1897.

Present:

The Hon. Mr. Justice Lawrie, Vice-President, in the Chair.

Mr. P. Freüdenberg.
Dr. L. Pinto.
Mr. Lewis Walker.
Rev. F. H. de Winton.

Mr. J. Harward and Mr. G. A. Joseph, Honorary Secretaries.

Visitors: five gentlemen.

Business.

1. Read and confirmed Minutes of General Meeting held on January 9, 1897.

2. Mr. Harward read the following—

ANNUAL REPORT FOR 1896.

The Council of the Ceylon Branch of the Royal Asiatic Society have the honour to lay before this Meeting their Annual Report for the year 1896.

Meetings.

Six General Meetings of this Society have been held during the year,* at which the following Papers were read and discussed, viz.:—

(1) "Legislation in Ceylon in the early portion of the Nineteenth Century," by H. White, C.C.S.
(2) "On a Curious Nematoid Parasite from the Stomach of a Ceylon Insect (*Mantis religiosa*)," by O. Collett, F.R.M.S.
(3) "How the last King of Kandy was captured by the British," by T. B. Pohath.
(4) "Ancient Cities and Temples in the Kurunégala District: II.—Ridí Viháré," by F. H. Modder.
(5) "The Inauguration of the King in Ancient Ceylon," by C. M. Fernando, B.A., LL.B.Cantab., M.R.A.S.Eng.
(6) "Ancient Cities and Temples in the Kurunégala District: III.—Paṇḍuwas Nuwara," by F. H. Modder.
(7) "Robert Knox's Siṇhalese Vocabulary," by D. W. Ferguson.
(8) "Place Names of the Vaṇṇi," by J. P. Lewis, M.A., C.C.S.
(9) "Reland on Malay, Siṇhalese, and Tamil," by J. P. Lewis, M.A., C.C.S.
(10) "Note on the Fortifications of Yápahuwa," by J. Harward, M.A.Oxon.

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* General Meeting, January 9, 1897, at which Paper (11) was read, is included in the Part for 1896, for convenience.

(11) "Interim Report on the Operations of the Archæological Survey at Sígiriya (Second Season), 1896," by H. C. P. Bell, C.C.S., Archæological Commissioner.

MEMBERS.

During the past year ten new Members were elected, viz., C. Muttiah; Dr. J. S. Johnpulle; Coomáraswámy Srikánta; C. Namasivagam; D. J. Arsecularatne; L. Walker, M.A.; G. W. Bibile; E. S. D. Tillekeratne; J. E. D. Silva; and G. C. Trask.

Five Members resigned, viz., G. Grenier; C. O. Mackwood; H. Nevill, C.C.S.; Hon. F. R. Saunders, C.M.G., C.C.S.; and A. Thomson.

The following names of Members were removed from the roll for not comforming to No. 30 of the Society's Rules, viz.:—J. D. Casinader, F. W. de Silva, W. H. Dias, N. A. W. Jayawardena, N. Mendis, A. H. Monarasinha, R. O. S. Morgan, and S. Visuvalingapillai.

The Hon. L. F. Lee has rejoined the Society as a Life Member.

Mr. A. Haly, the Director of the Colombo Museum, was elected an Honorary Member in recognition of services rendered by him, and in virtue of his official position as Director of the Colombo Museum.

By the death of Dr. H. Trimen the Society has lost one of its most distinguished Members. Dr. Trimen was born in London in 1843 and educated at King's College. He studied medicine, and in 1865 graduated M.B., but he never practised his profession. In 1867 he was appointed Lecturer on Botany at St. Mary's Hospital, and in 1869 entered the Botanical Department of the British Museum as a Senior Assistant. He remained in the Museum till 1879, when he accepted the post of Director of the Royal Botanic Gardens, Ceylon. His first published work appeared in the *Phytologist* in 1862. In 1869, conjointly with Mr. W. T. Thiselton-Dyer, the present Director of the Kew Gardens, he brought out a work on the "Flora of Middlesex," which still holds a position in the first rank among county "Floras." In 1866 Dr. Trimen discovered *Wolffa arrhiza* at Staines, the first locality recorded for it in England. In 1870 he joined Dr. B. Seeman in editing the Journal of Botany, and was sole editor from 1872 to 1879. In 1880 he associated himself with Professor Bently in the publication of an illustrated work in four volumes on "Medicinal Plants." Dr. Trimen's great work is his "Handbook to the Flora of Ceylon," three volumes of which have been published, while the fourth and last has been left unfinished. To the *Encyclopædia Britannica* he contributed a Paper on Grasses. Dr. Trimen was a Fellow of the Linnæan Society, and in 1883 was elected a Fellow of the Royal Society. He joined this Society in 1880, and was for several years a Member of Council. He always took an active interest in the Society's affairs and contributed the following valuable Papers to its Journal:—

(i.) "A Systematic Catalogue of the Flowering Plants and Ferns Indigenous to, or growing wild in, Ceylon, with the Vernacular names and with reference to Thwaites' *Enumeratio*;" published in Journal, Vol. IX., No. 30, 1885.

(ii.) "Remarks on the Composition, Geographical Affinities, and Origin of the Ceylon Flora;" published in Journal, Vol. IX., No. 31, 1885.

(iii.) "Note on the Botany of Riti-gala;" published in Journal, Vol. XI., No. 31, 1889.

Library.

The additions to the Library during the year numbered 278 volumes. The acquisitions are chiefly exchanges received from other Societies. The Library is indebted for donations to the following:—The Government of Bengal, the Secretary of State in Council for India, United States Department of Agriculture, the Ceylon Government, the Director of Public Instruction, the Government of India, the Government of Bombay, the Government of Punjab, Calcutta Sanskrit College, the Government of Madras, Harward University, the Government of Queensland, the Government of North-West Provinces and Oudh, and to Messrs. D. W. Ferguson, G. A. Joseph, and Dr. H. Trimen.

Additional shelf accommodation has been provided, by which the books have been rendered more accessible and the congested state of the Library relieved to some extent. Some of the books stored away in cupboards can now be conveniently consulted. The want of space for books, referred to in previous Reports, is still a most pressing question, and seriously interferes with the proper administration and development of the Library. No adequate remedy for this state of things can be expected until additional space has been procured by the long-delayed extension of the Museum building.

Journals.

One number of the Society's Journal has been published during the year (Vol. XIV., No. 46, 1895), which contains, in addition to the Proceedings of the Council and General Meetings, the following Papers:—

(i.) "Gleanings from Ancient Tamil Literature," by the Hon. P. Coomáraswámy.

(ii.) "King Seṇkuṭṭuvan of the Chera Dynasty," by the Hon. P. Coomáraswámy.

(iii.) "Interim Report on the Operations of the Archæological Survey at Sígiriya in 1895," by H. C. P. Bell, C.C.S., Archæological Commissioner.

(iv.) "A Sketch of the Early History of the Ceylon Branch of the Royal Asiatic Society," by the Lord Bishop of Colombo, President.

The Journal for 1896 is ready, and an advance copy is laid on the table.

Archæology.

The Archæological Commissioner favours the Council with the following synopsis of the work done by the Archæological Survey in 1896:—

General.

The Archæological Vote for last year was Rs. 35,000—covering Salaries of the whole staff, Transport, Labour, and Miscellaneous charges (grants to other Provinces, photography, epigraphical work, &c.).

With this sum the Archæological Commissioner was enabled to push on operations at Sígiriya (Central Province) vigorously for a second season, and to further continue the hunt for ancient sites and inscriptions in the North-Central Province.

But at Anurádhapura itself steady advance in excavating the vast ruin-strewn area still untouched has unfortunately been again retarded

by limited means. In November and December—wet months best suited for digging—all excavation had to be suspended from sheer want of money.

Similarly, in the epigraphical branch, beyond adding considerably to the already large stock of inscriptions copied, and suitable for publication, the Archæological Commissioner found himself powerless to start the issue of that most desirable work—a standard "*Epigraphia Zeylanica*."

Sígiriya.

The Archæological Commissioner's "Interim Report on the Operations of the Archæological Survey at Sígiriya (Second Season), 1896," has recently been read at a General Meeting of this Society.

At Sígiriya some four months' work has resulted in decided progress. Almost the entire site of the ancient *nuwara*, or city, has been swept of undergrowth and carefully surveyed. On the summit of the Rock fully half of the interesting citadel (with its terraces, stairs, walls, tanks, &c.) is now laid bare, and its general plan well disclosed.

Below, the difficulty of gaining access into the two fresco "pockets," in the west scarp overhanging the "gallery," has been finally surmounted; and of the twenty-two frescoes left on *Sígiri-gala*, six have already been accurately copied in oils by Mr. D. A. L. Perera, Head Draughtsman, Archæological Survey.

Work is about to re-commence at Sígiriya for the third season.

Kęgalla District.

In 1895 a grant of Rs. 500 was sanctioned by Government for the restoration of the basement of that unique ruin *Berẹndi Kóvil*, near Avisáwélla. Last year, a further sum of Rs. 600 was allowed for rebuilding the ornamental wall of the terrace on which the shrine stands.

The Assistant Government Agent, Kęgalla, reports that the work has been most effectively carried out, from first to last, by Mr. Mayes, District Engineer.

Anurádhapura.

(*a*) *Thúpáráma.*—The whole of the buildings within the outer boundary have now been excavated, and the quadrangular wall line exposed along its full extent. The ruined site immediately west of the Dágaba (sometimes termed "Mihindu's Tomb," and partially excavated by Mr. J. G. Smither twenty years ago) has been dug up, afresh, and more fully. The *pirivena*, outhouses, &c., are being followed, in order to ascertain, as far as possible, the complete original plan of the Thúpáráma Monastery premises. Further, the sloping bank of *débris* which hid the other half (not excavated in 1895) of the high wall encircling the raised *maḷuwa*, or platform, of Thúpáráma Dágaba, was completely removed. The appearance of this most picturesque *stúpa* has thereby been greatly enhanced.

(*b*) *Mulla-gala Ruins.*—A party was detached to excavate a small block of ruins, lying in thick jungle, half way between the Jaffna road and the Malwatu-oya, and some three miles out of the town. This little monastery, complete in itself, is evidently very ancient. The style of the buildings—not more than half a dozen in all—recalls those at Riṭi-gala in plain simplicity of stonework. The *pilima-gé* (image-house) at the back was strikingly perched on a rocky knoll, mounted by three or four flights of steps.

(*c*) *Puliyankulam Monastery.*—The same party next commenced excavating the extensive monastery bordering the Jaffna road at the junction with "MacBride's Deviation." So far, only three of the four shrines of the inner enclosure, and two or three buildings outside, have been finished. This monastery, though larger, so closely resembles "Vijayaráma" that it probably belongs to the same period.

(*d*) *Eláḷa Sohona.*—The examination of the tree-covered hillock, popularly known as "Eláḷa's Tomb," situated a few hundred yards south of the sacred Bó-tree, and adjoining the Kurunégala road, has at last been undertaken. The identification of this site is one of the chief problems connected with the ancient city remaining to be solved.

Two broad trenches are being run into the circular mound on the east and north sides. As soon as the plinth of the structure is reached the two gangs will turn respectively north and eastwards until they meet. Subsequent action must depened on the experience gained at this quadrant.

Circuit Work.

August and September were devoted to the thorough exploration of the Vilachchiya Kóralé, the wildest part of the North-Central Province. The greater portion of this huge Kóralé is virtually *terra incognita* and quite uninhabited, save when overrun during the dry season by gangs of Moors from the west coast, illicitly bent on the wholesale extermination of game. Magnificent tanks, such as *Mahá*, and *Kuḍa*, *Vilachchiya*, long breached and abandoned, testify to the ancient prosperity of this part of the Island, now cursed by want of water. Archæologically, the Vilachchiya Kóralé is comparatively barren ; though more antiquities will undoubtedly come to light when this neglected division becomes once more peopled.

Leaving the Puttaḷam road on the 24th of August, and moving with baggage-coolies, the expedition traversed the almost unknown *Gal-gé Waṇṇi*, *Moragalla Waṇṇi*, *Vil Pattuwa* ("lake district"), *Vilachchi Waṇṇi*, and the *Pichchampattu Tulána*, emerging finally at the Maṇṇár road—having struck but one village in the five weeks' march between August 31 and October 4 !

The interminable *kaṭu-pat*, or thorn jungles, the narrow tracks in hot, deep sand, and the exceeding scarcity of water, rendered this circuit the most trying yet accomplished by the Archæological Survey.

Three or four days were given to *Tantri-malai*—by far the most interesting site in the Vilachchiya Kóralé. The beautifully carved colossal images of Buddha (seated and prone), rock-hewn as at the Gal-viháré, Polonnaruwa, were freed of jungle, and the *débris* partially excavated.

A varied and extensive set of photographs were secured during the tour.

With this circuit the Archæological Survey has completed—a few places worthy of a second visit excepted—the exploration of all the seventeen Kórálés forming "Nuwarakaláwiya" (*i.e.*, the whole of the vast North-Central Province, Tammankaḍuwa excluded), or an extent of country covering approximately 3,000 square miles.

Tammankaḍuwa will be examined in 1897.

Epigraphical.

Drs. Goldsmidt and Müller record five or six inscriptions in all from the Vilachchiya Kóralé. These were re-copied and photographed where possible; and several other hitherto unnoticed rock and pillar inscriptions added to the list.

OFFICERS.

His Excellency the Governor has accepted the office of Patron of the Society. Mr. F. Lewis was appointed in September Acting Honorary Treasurer in place of Mr. F. C. Roles, who left for Europe. Messrs. F. H. Price and C. M. Fernando were elected Members of Council in place of Messrs. J. P. Lewis and A. P. Green, who retired from the Council under Rule 16.

FINANCES.

The following is a statement of the income and expenditure of the Society for 1896:—

Receipts.			Rs. c.	Rs. c.
Balance, General Account		...	...	125 38
Entrance Fees	...	...	...	52 50
Members' Subscriptions,	1891	...	10 50	
Do.	1892	...	21 0	
Do.	1893	...	84 0	
Do.	1894	...	257 25	
Do.	1895	...	357 0	
Do.	1896	...	1,371 50	
Do.	1897	...	5 25	
				2,106 50
Life Members	...	...	...	140 50
			Total ...	2,424 88

Expenditure.				Rs. c.
Printing ...	...	...	...	587 68
Charges ...	...	...	...	872 92
Books ...	...	...	...	6 0
Conversazione account, closing items		...	...	42 46
				1,509 6
Balance (Bank of Madras)		...	...	915 82
			Total ...	2,424 88

Examined and found correct:
E. BOOTH.

F. LEWIS,
Acting Honorary Treasurer.

3. Rev. F. H. DE WINTON moved the adoption of the Annual Report. The document, he said, spoke for itself of the good work done during the year, as an advance copy of the Journal, laid on the table that evening, further testified to.

Dr. PINTO seconded, and the Report was adopted.

The Office-Bearers.

4. The Chairman then read the following list of gentlemen nominated by the Council of the Society as Office-Bearers for 1897. On the proposition of Mr. L. Walker, seconded by Dr. Pinto, the list was accepted unanimously.

President.

The Right Rev. the Lord Bishop of Colombo.

Vice-Presidents.

The Hon. Mr. Justice Lawrie ; Mr. Staniforth Green.

Council.

Hon. P. Coomáraswámy.
Mr. J. Ferguson.
Mr. C. M. Fernando.
Mr. P. Freüdenberg.
Mr. A. Haly.
Mr. J. P. Lewis.
Mr. F. M. Mackwood.
Mr. F. H. Price.
Mr. W. P. Raṇasiṃha.
Mr. E. S. W. Senáthi Rájá.
Dr. W. G. Vandort.
Mr. F. H. de Vos.

Honorary Treasurer.

Mr. F. C. Roles.

Honorary Secretaries.

Mr. H. C. P. Bell, C.C.S.; Mr. J. Harward, M.A.; Mr. G. A. Joseph.

Vote of Thanks.

5. Mr. P. Freudenberg proposed a vote of thanks to the Chair, which was cordially passed.

6. In response Mr. Justice Lawrie remarked that there had been an omission on his part, which he regretted—that was to thank the Honorary Secretaries for their valuable services to the Society during the past year. He was sure that those services were fully recognized by them all.

7. The Meeting then terminated.

COUNCIL MEETING.

Colombo Museum, March 18, 1897.

Present :

The Lord Bishop of Colombo, President, in the Chair.

Mr. P. Freüdenberg. | Mr. S. Green.

Mr. A. Haly.

Mr. J. Harward and Mr. G. A. Joseph, Honorary Secretaries.

Business.

1. Read and confirmed Minutes of Meeting of Council held on January 18, 1897.

2. Resolved,—That the following Candidate for admission into the Society as a Resident Member be elected, viz. :—

G. C. Lee : nominated by { S. G. Lee. / J. Ferguson.

3. Laid on the table a letter from Mr. F. Lewis, tendering his resignation as Acting Honorary Treasurer.

Resolved,—That the thanks of the Council be accorded to Mr. Lewis for his services as Acting Honorary Treasurer.

4. Laid on the table a letter from Mr. P. Freüdenberg soliciting exchange of Publications with the Anthropological Society of Berlin.

Resolved,—That the Society do exchange Publications with the Anthropological Society of Berlin.

5. Laid on the table Circular No. 11 of January 19, containing five Papers on "The Industries of Ceylon," by Mr. Charles Perera Ekanáyaka ; referred to Messrs. C. M. Fernando and G. A. Joseph for report.

Resolved, in view of the remarks on the Circular by the gentlemen to whom the Papers were referred, that they be not accepted, but that the writer be thanked for forwarding them to the Society.

6. Laid on the table a Paper entitled "A Geological Sketch of the North-Western Province," by Mr. F. H. Modder.

Resolved,—That the Paper be accepted, and that it be referred to Messrs. A. Haly and P. Freüdenberg for any remarks they may have to offer.

7. Laid on the table a Paper entitled "Ancient Cities and Temples in the Kurunégala District : IV.—Dambadeṇiya, by Mr. F. H. Modder.

Resolved,—That the Paper be referred to the Lord Bishop of Colombo for his opinion.

COUNCIL MEETING.

Colombo Museum, May 12, 1897.

Present :

The Lord Bishop of Colombo, President, in the Chair.

Mr. J. Ferguson. | Mr. A. Haly.

Mr. F. C. Roles, Honorary Treasurer.

Business.

1. In the absence of the regular Secretaries Mr. Roles was elected Secretary *pro tem.*

2. Read and confirmed Minutes of Council Meeting held on March 18, 1897.

3. Laid on the table Mr. Modder's Paper entitled "A Geological and Mineralogical Sketch of the North-Western Province," with the report thereon by Messrs. Freüdenberg and Haly, together with a letter from Mr. Modder.

Resolved,—That the Paper be read at a General Meeting of the Society, as amended according to the suggestions offered by the gentlemen to whom it had been referred.

4. Laid on the table a Paper entitled "Contributions to Ceylon Malacology," by Mr. Oliver Collett, F.R.M.S.

Resolved,—That in view of the note attached to the Paper by Mr. Haly, the Paper be accepted and read at a General Meeting of the Society.

5. Resolved,—That a General Meeting be held on the 22nd instant, provided that the Secretaries find the day convenient; otherwise, that the Meeting be postponed to the 29th instant, and that the business be the reading of the following Papers:—

(1) "A Geological and Mineralogical Sketch of the North-Western Province," by Mr. F. H. Modder,
(2) "Contributions to Ceylon Malacology," by Mr. Oliver Collett.
(3) "Ancient Cities and Temples in the Kurunégala District: IV.—Dambadeṇiya," by Mr. F. H. Modder.

GENERAL MEETING.

Colombo Museum, May 29, 1897.

Present:

The Lord Bishop of Colombo, President, in the Chair.

Mr. C. M. Fernando. | Mr. A. Haly.

Mr. F. C. Roles, Honorary Treasurer.
Mr. J. Harward and Mr. G. A. Joseph, Honorary Secretaries.

Visitors: one lady and three gentlemen.

Business.

1. Read and confirmed Minutes of Annual General Meeting held on February 6, 1897.

2. Mr. A. Haly read the following Paper:—

CONTRIBUTIONS TO CEYLON MALACOLOGY.*

(1) The Terrestrial Mollusca of Ambagamuwa.

By O. COLLETT, F.R.M.S., Cor. Member of the Malacological Society of London, &c.

THE following observations are offered on a collection of Mollusca made during the last two years in the district of Ambagamuwa (Central Province).

This district is situated in the heart of the wet region of the Island. It ranges from 2,000 ft. to 4,000 ft. in altitude, and has an average annual rainfall of 190 in.

The extent of my researches has been limited, owing to the nature of my professional duties.

This Paper, therefore, is only to be looked upon as a preliminary account of the inquiry. I hope in time to bring out a complete list of the land-shells that are to be found in this district, giving, in as many instances as possible, particulars of the habits, instincts, times of breeding, &c., of the different species. In the difficult task of identifying the species here enumerated, I have received much kind assistance from Dr. F. Jousseaume, the celebrated Zoologist of Paris, to whom I take this opportunity of expressing my grateful thanks. I have also derived much useful information from the Paper which Dr. F. Jousseaume has written on Ceylon shells,† and which is quite indispensable to collectors.

FAM. HELICIDÆ.

1.—*Helix (Fruticicola) similaris*, Fér.

This species is abundant in the district, and appears to be widely distributed. It occurs in thick scrub and *lantana*,

* To illustrate the Paper two cases of land shells were exhibited, containing the shells described by Mr. Collett, and presented by him to the Colombo Museum.

† Mollusques recueillis à Ceylon par M. E. Simon, et revision générale des especes terrestres et flurio-lacustres de cette Ile. (Mémoires de la Société Zoologique de France, 1894, pp. 264–330.)

and also upon stone walls, especially where the masonry is new. The shells are very variable in colour and markings, some being pure white, while others are dark reddish-brown. In some instances they are unicolorous; but as a rule they are banded with a single line, which is much darker than the general colouring of the shell. The animal, which is gray and white, gives a speckled appearance to the semi-transparent shell. It is oviparous in April–September. The eggs are of about the size of grains of sago, globular in shape, bluish-white, and calcareous.

2.—*Helix acuducta*, Benson.

I have found a few specimens of this distinctly Indian form in Ambagamuwa. It has not previously been recorded from Ceylon. It occurs in low thickets and dense scrub in damp localities. Young specimens are not rare, but full-grown shells are seldom seen—probably the animals are much preyed upon by birds. Hitherto regarded as a Nilgherries species (*Conchologia Indica*, pl. 1., f. 5).

3.—*Hemiplecta hyphasma*, Pfr.

This pretty little species is abundant among ferns and grass, and on mossy banks, throughout the district. It has a semi-transparent shell, through which the black and white markings of the animal are visible.

4.—*H. cingalensis*, Bens.

I have taken a few specimens of this species from beneath the bark of a decaying tree in a clearing—kindly identified by Dr. Jousseaume. I have never found a mature shell. It appears to be rare in this district.

5.—*H. chenui*, Pfr.

This species is fairly common throughout the district. It closely resembles the South India form *H. chenui* (*Conchologia Indica*, pl. xxv., f.1), with which it is in all probability identical. The animal is dirty white, marked with longitudinal gray bands; it is very slimy, and makes a peculiar squeaking noise, like a beetle, when molested. It is oviparous

in May–August. The eggs are 8 mm. long and 4 mm. in width. They are oval, pointed at the ends, and carinated longitudinally; they are pure white in colour and quite soft (uncalcified).

Habitat amongst decaying vegetation. Young animals are of a brick-red colour, visible through their translucent shells.

6.—*H. ceylanica*, Pfr.

This species is abundant in Lower Ambagamuwa, but it is not found in the upper part of the district.

Habitat among fallen leaves in damp shady localities; 2,000 ft.

7.—*H. semidecussata*, Pfr.

I have found this species fairly common throughout the district. It occurs among fallen leaves in forest and scrub, and is much preyed upon by birds, with whom it appears to be a favourite food. I have occasionally come across a sacrificial stone in the jungle surrounded by heaps of broken shells. When alive the animal, which is mottled black and white, gives a handsome "checked" appearance to the reddish-brown translucent shell. The body whorl of young specimens is acutely angular.

According to the *Conchologia Indica* this is essentially identical with the Mauritian species.

8.—*Ernstia aspirans*, Blanf.

This species usually appears in very wet weather. I have then often found it on the trunks of orange trees in bungalow gardens. Height 3·33 mm., diameter 3 mm.

9.—*Microcystis suavis*, Jouss.

This species occurs sparingly here. The animal, when alive, gives a dark olive tint to the transparent shell.

Habitat among ferns and moss in shady localities. Height 2·50 mm., diameter 4 mm.

10.—*M. Thwaitesii*, Pfr.

I have only found a few of this species in the district. One of them Dr. Jousseaume describes as an unusually large and

beautiful specimen. It has the same habitat as the last species.

Height 3·50 mm., diameter 6 mm. (largest specimen).

11.—*Macrochlamys partita*, Pfr.

This is one of our commonest species. It is rather variable in size and in depth of colour. The animal, which is black and white, is dimly visible through the shell.

Habitat amongst leaf mould around the roots of plants.

12.—*M. politissima*, Pfr.

This species is fairly common throughout the district, but perfect specimens are scarce on account of the brittle nature of the shells. The animal, which can only partially retreat into its shell, is bluish-black with dark gray tentacula.

Habitat among thickets and scrub in ravines and swampy places.

13.—*M. carneola*, Pfr.

I have taken one specimen only of this species from among ferns in a swamp (3,000 ft.).

14.—*Corilla erronea*, Albers.

This species is fairly common throughout the district. The shells are very variable in size, shape, and colouration, some specimens being almost black. The animal is dirty white, its dorsal surface dusted with grayish granules.

Habitat in heavy forest among fallen leaves.

15.—*C. fryæ*, Gude.

This is very similar to the last species. Mr. Gude has made a new species of it on account of a slightly different arrangement of the parietal folds of the armature. (See *Science Gossip*, 1896, vol. III., p. 89. Dr. Jousseaume calls it a large variety of *C. erronea*, and I think he is correct.)

16.—*C. Beddomeæ*, Hanley.

This species is not common here. The shells found in Ambagamuwa appear to be a good deal smaller than those found at a lower elevation, where they are more plentiful.

Habitat in heavy forest beneath fallen leaves. Ambagamuwa specimens measure: height 4 mm., diameter 15 mm.

17.—*Plectopylis clathratula*, Pfr.

This species is fairly abundant. The shells are much smaller than the type figured in the *Conchologia Indica.* The animal is pale brownish-red, visible through the translucent shell.

Habitat on the under side of decaying leaves in forest. Dimensions : height 2·20 mm., diameter 5 mm.

18.—*Acavella Waltoni*, Jouss. (*Helix Waltoni*, Reeve.)

This is one of the commonest species in the district. The shells are very variable in size and colouration, some of them being extremely handsome. The Ambagamuwa specimens are, as a rule, smaller than those found at lower elevations.

The animal is inky black, with dark bluish-gray tentacula. It is oviparous in April–September. The eggs have white calcareous shells, usually measuring 21 mm. in length and 12·50 mm. in width. They are deposited singly, in leaf mould, around the roots of trees in forest. The embryonic shells, which are thin and almost transparent, are beautifully variegated.

Habitat in forest undergrowth and under fallen leaves.

19.—*Acavus superba*, Pfr.

This species is represented in Ambagamuwa by a beautiful variety (var. *roseolabiata*), which is figured in the *Conchologia Indica* as *Helix superba.*

Nevill has, however, pointed out that this is in reality quite distinct from Pfeiffer's type, although the difference does not appear to have been noticed by Mr. Hanley.*

Perfect specimens of this form are seldom seen. They invariably, when old, become coated with a slimy lichenous growth, which gradually destroys the bright colouring of the shells. This is doubtless a protection against birds and other

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* Journal, R. A. S., Bengal, 1881, No. III., p. 134.

enemies, for it renders the shells scarcely distinguishable, at first sight, from knotty excrescences on the trunks of the trees upon which they live.

The animal is of a light chocolate colour, with large and prominent tentacula. The upper surface of the foot is coarsely tuberculated. It is oviparous in April–September. The eggs, which have yellowish-white, oblong, calcareous shells, are usually 22 mm. long and 13·60 mm. in breadth. Young specimens are particularly handsome, their shells being variegated with white markings, which however become obliterated as the shells increase in size.

Habitat, on the trunks of trees in damp shady localities. Seldom seen above 3,500 ft.

Fam. Achatininæ.

20.—*Glessula inornata*, Pfr.

This species is abundant in the district. The animal is yellowish-white, and emits a peculiar acrid smell when molested—probably protective. It is oviparous in April–August. I have taken specimens in those months containing eight to ten young shells with the first three whorls already formed. They lie close together, in a chain, within the second largest whorl of the parent shell, through which they are dimly visible.

Habitat in forest, beneath decaying leaves. A filmy epiphragm closes the aperture of the shell in the dry season.

21.—*G. niteus*, Gray.

One or two specimens, taken in the lower part of the district, have been identified by Dr. Jousseaume as an opaque variety of this species.

22.—*G. parabilis*, Benson.

I have only one specimen, found in the lower part of the district (2,000 ft.).

23.—*Opeas gracilis*, Hutt.

Very common under logs and stones throughout the district. It appears to be widely distributed.

FAM. BULIMINÆ.

24.—*Phengus intermedius*, Pfr.

Bulimus (Beddomea) intermedius, Pfr.

This species, as figured in *Conchologia Indica* (pl. xxi., figs. 6–8), is somewhat common in Ambagamuwa. Dr. Jousseaume has remarked that the figures given in the *Conchologia Indica* appear to belong to two different species (*Proc. Zool. France*, 1894, p. 295). In reality, however, they are identical, the species being very variable in size and contour. The shells have a beautiful glossy appearance as a rule, but I have taken specimens (alive) with the enamel entirely worn away. The animal is of a rich emerald green, with yellow tentacles and foot. It is visible through the semi-transparent shell.

Habitat amongst foliage in forest, 3,000 to 4,000 ft. It is sometimes found feeding on coffee and tea plants.

Obs.—G. Nevill, writing in 1881, after the publication of the *Conchologia Indica*, mentions this species as follows :—

Sub-genus Beddomea, G. Nevill.

(Hand list, 1878, p. 127, type *Bul. ceylanicus*, Pfr.)

The animal of the type species of this very distinct and well-marked group was described by E. L. Layard (*Annual Magazine*, 1853) as of a brilliant green colour, visible through the shell ; it feeds on the coffee plant. (*J. A. S., Bengal*, No. III., p. 134.)

This description is true of *B. intermedius* but not of *B. ceylanicus* (see *Conchologia Indica*, pl. xxi., fig. 2 ; and pl. cxlviii., fig. 9). The latter is a low-country species, having a much thicker shell with brilliantly coloured markings, while *B. intermedius* is always white.

25.—*Phengus Simoni*, Jouss.

This species is not so common as the last. It is, as Dr. Jousseaume has pointed out, distinct from *B. albizonatus* of Reeve, by its smaller size and by the absence of the white band at the angle of the shell. It is, moreover, much less sharply keeled, and the shell is thicker and more blue in colour. Habitat in forest, on the leaves of trees.

Fam. Cyclostominæ.

26.—*Pterocyclos Cumingii*, Pfr.

I have a few specimens from Lower Ambagamuwa, but the species does not occur in the upper part of the district.

Habitat in decaying vegetation, 2,000 ft.

27.—*Aulopoma helicinum*, Chemn.

This species is common throughout the district. The outer whorl of the operculum is flexible and retractile, and does not always overlap the peristome of the shell, as some observers have stated.

Habitat in thick scrub, *lantana*, &c., among fallen leaves.

28.—*Cyclophorus annulatus*, Troschel.

This species is common throughout the district. The shells taken in the lower part of the district are as a rule larger than those found above an altitude of 3,000 ft.

I have one large specimen, taken alive, with the two first (central) whorls of the shell absent. Young specimens are striated in the line of growth by short bristly ridges of the epidermis.

Habitat in forest and scrub, beneath fallen leaves.

29.—*C. Bairdii*, Pfr.

I have found this species fairly abundant among fallen leaves in heavy forest.

Young shells are coated with an olive-brown velvety epidermis, which disappears on full-grown specimens.

30.—*C. ceylanicus*, Pfr.

This species is common in Lower Ambagamuwa, but does not occur in the upper part of the district. It is a low-country species.

31.—*C. Jerdoni*, Benson.

This is very near the last species. I have one specimen from the lower part of the district.

32.—*C. cratera*, Benson.

This species is not common here. I have found a few specimens among fallen leaves in forest, 3,000 ft.

33.—*C. subplicatus*, Beddome.

This is a rare species, especially in the upper part of the district.

The figure given in the *Conchologia Indica* is misleading and not at all like Col. Beddome's type. (See *Proc. Zool. Soc.*, 1875, p. 442.)

Young specimens are coated with a greenish-brown velvety epidermis.

Habitat in heavy forest, beneath fallen leaves.

34.—*C. Layardi*, H. Adams.

I have found a few specimens of this beneath fallen leaves in forest, 3,600 ft. It is not common here.

35.—*Leptopoma orophilum*, Benson.

This species is fairly abundant in thick scrub, *lantana*, &c., and amongst undergrowth in forest. The animal is dark yellow, with yellowish-brown tentacula (2). It is frequently attacked by the larva of a carabid beetle, which, having killed the animal, completes its metamorphosis within the shell.* I have also found exuvia of this larva, but less frequently, in the shells of *Glessula* and *Cataulus*.

36.—*Jerdonia ceylanica*, Beddome.

This species is scarce in Ambagamuwa. I have found a few specimens in forest undergrowth. The epidermis of the shell, which contains the colouring, is easily destroyed, so that perfect specimens are not often seen.

FAM. MEGALOSTOMINÆ.

37.—*Cataulus Blanfordi*, Dohrn.

This species is fairly common throughout the district. The shells are rather variable in size and colour and in the thickness of the margin of the peristome. The animal is greenish-brown, with orange-coloured tentacula, at the base of which the eyes are situated.

* Mr. E. Ernest Green, who kindly examined the insect for me, was unable to identify the species. I have not secured specimens of the imago yet.

The operculum of this, and of the other species of the genus, consists of a flat horny disc separable into many plates. These plates increase in number as the animal grows older. The operculum of young specimens consists of a single film, thin and transparent.

Habitat in heavy forest, beneath decaying leaves.

38.—*C. Nietneri*, Nevill.

This species is not common in Ambagamuwa. It is the most aberrant species of its genus, and is itself very variable in size and contour.

It is gregarious, being sometimes found in numbers of a dozen specimens ; but it is extremely local, and only occurs in certain favoured localities, which are sometimes only a few square yards in area. The animal is very dark green, visible through the straw-coloured shell, to which it gives a very pretty appearance.

Habitat in low brushwood and among ferns in swampy places. The figure given of this species in the *Conchologia Indica* is poor and misleading.

List of identified Mollusca from Ambagamuwa.

1.	Helix similaris ...	Fér.
2.	H. acuducta ...	Bens.
3.	H. hyphasma ...	Pfr.
4.	H. cingalensis ...	Bens.
5.	H. chenui ...	Pfr.
6.	H. ceylanica ...	Pfr.
7.	H. semidecussata ...	Pfr.
8.	E. aspirans ...	Blanf.
9.	M. suavis ...	Jouss.
10.	M. Thwaitesii ...	Pfr.
11.	M. partita ...	Pfr.
12.	M. politissima ...	Pfr.
13.	M. carneola ...	Pfr.
14.	C. erronea ...	Albers.
15.	C. fryæ ...	Gude.
16.	C. Beddomeæ ...	Hanley.
17.	P. clathratula ...	Pfr.
18.	A. Waltoni ...	Rve.
19.	A. superba ...	Pfr.
20.	Glessula inornata	Pfr.
21.	G. niteus ...	Gray.
22.	G. parabilis ...	Bens.
23.	Opeas gracilis ...	Hutt.
24.	Bulimus intermedius	Pfr.
25.	Phengus Simoni ...	Jouss.
26.	Ptercyclos Cumingii	Pfr.
27.	Aulopoma helicinum	Chemn
28.	Cyclophorus annulatus ...	Trosch.
29.	C. Bairdii ...	Pfr.
30.	C. ceylanicus ...	Pfr.
31.	C. Jerdoni ...	Bens.
32.	C. cratera ...	Bens.
33.	C. subplicatus ...	Bedd.
34.	C. Layardi ...	H. Adams
35.	Leptopoma orophilum ...	Bens.
36.	Jerdonia ceylanica	Bedd.
37.	Cataulus Blanfordi	Dohrn.
38.	C. Nietneri ...	Nevill.

I have placed specimens of almost all of the above in the collection of the Colombo Museum.

3. The PRESIDENT said that the Paper was of the kind that the Society was anxious to receive, and it was evidently the result of much careful research in a direction in which practically nothing had been written.

4. Mr. HALY said he had on the previous day come across an appropriate passage in Wallace's "Natural Selection" (1891, p. 90), which he would read, instead of making any comments of his own on the Paper before them. Wallace wrote :—" Although such a store of interesting facts has been already accumulated, the subject we have been discussing is one of which comparatively little is really known. The natural history of the tropics has never yet been studied on the spot with a full appreciation of what to observe. The varied ways in which the colouring and form of animals serve for their protection, their strange disguises as mineral or vegetable substances, their wonderful mimicry of other beings, offer an almost unworked and inexhaustible field for the Zoologist, and will assuredly throw much light on the laws and conditions which have resulted in the wonderful variety of colour, shade, and marking which constitute one of the most pleasing characteristics of the animal world, but the immediate cause of which it has hitherto been most difficult to explain." Mr. HALY added that he trusted they would have more Papers of this sort, not only from Mr. Collett, but from other gentlemen interested in the Natural History of Ceylon.

5. Mr. C. M. FERNANDO then read the following Paper :—

ANCIENT CITIES AND TEMPLES IN THE KURUNEGALA DISTRICT.

By F. H. Modder.

IV.—Dambadeṇiya.

Dambadeṇiya, in Dambadeṇiya Uḍukaha Kóralé West, of the Dambabeṇiya Hatpattu, is, according to the latest Itinerary, only 17·95 miles from Kurunégala on the road thence to Negombo, although Casie Chitty gives the distance as "about 27 miles south of Kurunégala and 56 east of Colombo."*

* *Ceylon Gazetteer*, p. 84. The *Máhawaṇsa* (Wijesinha's translation) says :—"And in the vast space which extended from the city of Jambuddon to the city of Sirivaḍḍhana, the length and breadth whereof was about eight yojanas and one usabha, (the highway was) made even like the face of a drum, and was covered throughout with sand, exceeding fine and soft." Dr. Coplestone has conclusively pointed out that "*eight* yojanas" is a misreading, the word in the original being *half.* This discovery has resulted in establishing beyond all question that the graphic description in chapter LXXXV. does not apply, as it had all this time been considered to, to Kandy, but to a city the exact site of which has not yet with any degree of certainty been traced out and identified, not far from Dambadeṇiya. Dr. Coplestone (on the authority of Mr. D. M. de Z. Wickremasinha) identifies "the auspicious and prosperous city" with Nambambaraya, 6 miles from Dambadeṇiya (*Journ. C.B.R.A.S.*, No. 43, pp. 206–15). But Mr. H. Parker is of opinion that it existed in what is now a tract of dense jungle on the right bank of the Ḍeduru-oya in the Waṇṇi Hatpattu. He has in his possession an ola manuscript, which gives the boundaries of the lands attached to the city ; and he has received vague accounts of bricks and pillars having been seen in the forest by hunters, there being no inhabitants in the neighbourhood. At Nambambaraya, on the contrary, there is not the slightest vestige of any remains to justify the identification (*Cey. Lit. Reg.*, vol. VI., p. 396). The correct identification of Siriwardhanapura will ever be looked forward to with considerable interest, it having been demonstrated beyond all doubt that the "mountain capital" is out of the running.

Derivation and Ancient Boundary Limits.

The "boundary book," called "*Sri Laka Kaḍayuru*," or "the divisions of Laṇká," records the following particulars under the head of "Dambadeṇi Raṭa":—

At Rávaṇa's time here was a *damba* branch watch-hut from the *damba* tree that marks Dambadiva (Damba atu paela). During the eras of Kakusanda, Kónágama, Káksheyapa, and Gautama the name was unchanged. As ancient priests sat on the top of those rocks—as the ancient Nighanda and Nighendi had a controversy there—and planted *damba* branches there, it was called Jambudhroni Nagara. On the east, damming the oya, there is the village Aetugal piyassa. East of that is the Nánu rock carved with the elephant's foot-mark. Three yoduns off that is Morugama-piyassa, a niyangama. East of that, near the great mountain, is the clump of *mora* trees, and there is a stone post with an ox-hoof mark. On the north-east is the Maha Tal Ruk Saldigama, and in the midst of an atala-gala a deodonu mark (rainbow mark). On the south is Pera Mahat Páya. Where all the people of Laṇká were fed with gruel, a city, a gawa in extent, existed, called the great Batgama, and this village had no bounds; the tank east of it was Mi-waewa. Between east and north-east are the *mi* gardens and a stone image, and a carved staff (ketu saera mitiyak), and a yamaya and a sword, carved in the middle of seven stone rails (gal raen satak). Where a former king impaled an enemy, the village was called Tubu-ulala.* There are thirty-six marks. The centre is a tank, and there is a staff and (tal waetiya) fan-carved stone. On the north there is the rock, where milk used to be boiled by the Bamunugama. There is a Malava Pora carved stone kept upon a knotted *kumbuk* tree. In the midst of the Dikwaella a king stabbed a king, and the (sword) tip fell off: there is a village called Kadumuna† (sword tip). That village has twelve gal raen, carved with a sword. Where the *damba* branch formerly fell, at Denipota, a stone was placed, carved with the rainbow (deodunna) and sáma saera (? sáma arrow). On the north-west side of Dambadeṇiya is the oya and Nánu rock. 10,000 villages are in this. In those villages is a mul kaeṭemak (? inscription), at three corners an atala-gala carved with sword and shield (kadu palandu). The people here are all liars, and the women learn the high sciences.‡

Founding and Description of the City.

Dambadeṇiya was once a royal residence and the capital of the Maya division, albeit now an insignificant village.

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* Modern Tumbulla.—M. † Modern Kavudumuna.—M.

‡ *Taprobanian*, vol. II., pt. III., p. 60. [The whole passage from the *Kaḍaim-pota* needs retranslation.—B., *Hon. Sec.*]

In consequence of its ancient importance and renown, a Hatpattu and two Kóralés are called after it.

The city of Dambadeṇiya, or Jambudoṇi, was founded in 1236 A.D. by King Vijaya Báhu III., who was of the lineage of King Ṣri Saṅga Bo. During the usurpation of Mágha the country was in a state of disturbance, and Vijaya Báhu, having remained in concealment for some time, gained sovereignty over all the Waṇṇi country; and having collected an army of Siṅhalese went forth and dispersed the Tamils and delivered the beautiful country of Maya from the enemy.*

And on the highest top of the Jambuḍoni mountain he built a pleasant city with walls and gates of great beauty; and the wise and valiant lord of the land dwelt there in ease and comfort, and governed the kingdom.*

The "*Dambadeṇi Asna*," which is a historical account of the ancient city, gives the following descriptive particulars:—

Without the walls [of the temple] were built watch-houses [guard-rooms] and the royal stores. Several tanks were also constructed, and a rampart was also built round the city, of which the following are the streets: *Agampadı Vidiya*, "Mercenaries' street;" *Parivari Vidiya*, "Attendants' street"; *Setti Vidiya*, "Merchants' or Chetties' street." The Magistrate, the Military Officers, and other chiefs of the different parts of the city dwelt in it, together with 24,000 Siṅhalese soldiers paid by the Royal Treasury; 900 sculptors; 800 potters; the priesthood with the *Sangarája;* 900 elephant-keepers, including the keepers of the state-elephant; and 890 horsekeepers, who belonged to the city. Exclusive of their houses, there were 75,000 houses of the potters and 75,000 wells within the city wall.

Not a vestige of the city remains. On *Maligá-kanda,* more particularly described hereafter, it is said stood the royal palace, of which, however, not a trace is to be found.

The Temples and other Buildings.

King Vijaya Báhu built an Áráma and called it after his own name—*Vijayasundara Áráma*—and dedicated it to the priesthood. It is mentioned with due praise in the

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* *Maháwaṇsa*, LXXXI., 16 (p. 272).

"*Rájaratnákaraya*" that the king established a school in every village and charged the priests who superintended them to take nothing from the pupils for their trouble.

He reigned four years, and was succeeded by his son Parákrama Báhu III., who was crowned, according to the "*Dambadeṇi Asna*," at Dambadeṇiya during the sowing festival in the year 1824 of the Buddhist era, under the name of Sarvajña Paṇḍita Parákrama Báhu. He adorned the city and—

Brought forth the Tooth-relic from the Billa mountain (Beligala) with great pomp and ceremony unto the noble city of Jambudoṇi. And he caused a Tooth-relic house of great beauty to be built nigh unto the palace, at great cost, seeing that he had a great desire to worship the relic whenever he thought thereof, even during the three periods of the day. And he raised a costly altar in the midst thereof and covered it with a cloth of great value, and caused a receptacle for the Tooth-relic to be cut out of a precious stone of great size ; and to cover it he made a large casket of exceeding great beauty of precious gems of divers colours ; and a second casket of great brightness made he of five thousand *nikkhas* of gold to cover this ; and a third of twenty-five thousand *nikkhas* of silver to cover the last.*

According to the "*Dambadeṇi Asna*" the rock of Dambadeṇi, on which the King Mánabarana failed to erect any conspicuous building, was cleared of jungle, and on it was built a temple for the Tooth-relic, 22 cubits in height with three stories, and surrounded by a wall 80 cubits high.

And after he had caused the city to be decorated, commencing from the Relic-house, he held the great feast of the Tooth-relic with great honours.*...... And after the lord of the land offered unto the Tooth-relic the sixty-four royal ornaments, including his crown and his bracelets and such like † ...... Round about the vihára *Siri Vijaya-sundara*, that the king his father had built, he raised lofty walls and gates, and repaired and renewed the three-storied Relic-house. There also he set the Tooth-relic of the great sage on a high and costly throne.‡

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* *Mahâwaṇsa* (English translation), LXXXII., 7–15 (pp. 276-7). The greater portion of this chapter is taken up with an account of the exhibition of the Tooth-relic miracle.

† *Ibid*, LXXXII., 50 (p. 279).

‡ *Ibid*, LXXXV., p. 291. Among the regulations of the temple was that "every day an offering was made of 100,000 flowers, and every day of a different kind." (Upham's *Rájaratnákaraya*, p. 103.)

The king also—

Built round about the city many monasteries for the whole Order in common (*Saṅgharáma*), that were fit places for the abode of the eight great elders of the eight establishments and for learned and thoughtful elders who dwelt in villages and in the forests. And these were buildings of great breadth, and were adorned with many mansions composed of open halls in great number, with ponds of divers kinds, and covered walks surrounded by gardens of fruits and flowers that served as retreats both by day and night.*

He also brought elders learned in the scriptures from India, and the books that were necessary for them. The "*Bhaysujja Mañjusá*"—a Páli work—was composed about this time by the learned and benevolent elder, the chief of the monks of the *Pañcha Pariveṇa.*

The king "caused the priests of Laṇká to be taught in all the branches of religion, and logic, and grammar, and all the other sciences, and made learned men of many priests."† He adorned the royal palace like the palace of the chief gods, and decorated the city befittingly like unto the city of the gods.

On the murder of Vijaya Báhu IV. by his treacherous general Mitta, Bhuwaneka Báhu I., who had fled to Yápahuwa, was brought from that city and anointed king at Dambadeṇiya, where he took up his abode. After some years he removed his seat of government to Yápahuwa.

The "*Dambadeṇi Asna*," after giving a rambling account of the city, describes graphically the war between Paṇḍita Parákrama Báhu and the Tamils, and the hand-to-hand combat between the king and "Tamaliṇgomu," in which the former came off victorious.

The kings who reigned at Dambadeṇiya appear to have encouraged the cultivation of useful arts and sciences amongst their subjects, and possessed a large collection of valuable books of medicine in their public library.

The Modern Temple Library.

In this connection it may not be uninteresting to note the state of the modern library. Mr. D. M. de Z. Wickremasinha,

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* *Maháwaṇsa*, LXXXIV., 18–20 (p. 284). † *Ibid*, 27 (p. 285).

Assistant Librarian of the Museum (now employed in the British Museum), visited the library in 1889 and reported as follows :—

Before making inquiries for the manuscripts we went about the temple premises inspecting the several buildings, accompanied by the Chief Priest, who acted as our guide. Whilst walking about we talked of the history of Dambadeṇiya, and especially of the famous scholar who flourished there of old. In this way we gradually directed the conversation to the several ancient libraries of Ceylon, such as that founded by Parákrama Báhu, and to manuscripts in general. By the time we returned to the temple we had obtained permission from the Chief Priest to examine the library with the object of borrowing such manuscripts as we might wish to have copied.

There was no catalogue of the manuscripts, nor any sign of arrangement. These were in three different places : some in an almirah in a room on the ground-floor, some scattered on a table in another room near by, and others in a dirty old box in a loft, where they were allowed to rot. The Chief Priest told us that there had been another box full of manuscripts, which had been destroyed by white ants. I warned him that that would be the fate of the rest of the books if better care was not taken of them.*

After going through the collection of books some were borrowed for the Museum Library, among them "*Kalundápaṭuna*" (Siṇhalese verse), a legend connected with the accession of Paṇḍita Parákrama Báhu III. of Dambadeṇiya.

The information given in this little poem, as well as in the *Rájavaliya*, discovered by me in the Waṇṇi District, and in the *Maháwaṇsa*, will, I think, settle the vexed question as to the site of the ancient *Siriwardhanapura* founded byPaṇḍita Parákrama Báhu III. in the thirteenth century. These works show that Upham, Pridham, Knighton, Tennent, and others who followed them are more or less wrong in ascribing the founding of the modern Kandy to King Paṇḍita Parákrama Báhu III.*

Approach to, and Description of, Temple Premises.

The temple is approached by a *máwata* which branches off from near the ambalam to the left. A quarter of a mile along

* Administration Reports, Colombo Museum, 1889, p. I 18. See as to *Siriwardhanapura* the foot-note at the commencement of this Paper. Dr. Copleston was materially assisted in arriving at the conclusions therein referred to by Mr. Wickremasinha's researches.

it brings you to the entrance to the temple precincts, which are surrounded by a wall built of rock stones, roughly hewn. The door frame is composed of rock and the clumsy and unwieldy shutter of wood. On the temple grounds, to the right, is a dágaba, which is roofed over with tiles, and on the left is the viháré, with a little upstair, which leads into the chamber in which the Tooth-relic is said to have been kept. The temple is a small one, and, with the exception of the rock pillars and ornaments, seems, like the dágaba, to be of modern construction, the former probably having been built with the remains and in the site of the ancient edifice. In the front of the temple there is another entrance similar to the one just mentioned, which leads in the direction of *Maligá-kanda*, and was no doubt used by the kings of old in repairing thither for devotion. On the right of the entrance stands an old bó-tree, which is enclosed in the form of a square by a low stone wall, the space between the tree and the wall being filled in with sand. Offerings are made on a stone table, which is reached by a short flight of steps. The pansala stands outside the temple wall, and bears all the appearance of a modern structure. In February, 1892, a *bana-gé* was being erected by some Moratuwa carpenter, close to the pansala, in the modern style.

Rocky Hills and Legends.

Pridham and Casie Chitty agree to the very letter in their description of the situation of Dambadeṇiya :—

It stands in a very picturesque valley, which is terminated by ranges of lofty naked hills, rising perpendicularly in a variety of peaked forms.*

Hardy remarks :—

Above the city is a rock about 400 ft. high, nearly inaccessible, standing alone like the house of some giant. The folk-lore of the neighbourhood presents many curious legends.†

Maligá-kanda lies to the south-east of the temple, and on it, it is said, stood the palatial residence of King Paṇḍita

* *Pridham*, vol. II., p. 648 ; *Casie Chitty*, p. 84.

† *Jubilee Memorials of the Wesleyan Mission*, 1814–16.

Parákrama Báhu. There is some vegetation on the rock, as well as two ponds built with cut stones. There is no beaten track leading up to the hill, but any villager can guide the visitor to its summit. Before arriving at the top of the hill there are to be seen remains of a wall built between the boulders of granite. Past this wall there are some stone steps which lead to the spot, where there is an indication of a "*patirippuwa*" having once stood. Here, sitting on his royal chair, the king held an audience with his people. Before you come to the site of the "*patirippuwa*" a small tank is past. The whole hill is overgrown with jungle, and it is with the utmost difficulty that one is able to climb it. From the summit a splendid view of the surrounding country is obtained, with *Kat-gala* and *Waduwá-gala* in the near distance. It is said that the offerings to the king were placed on *Kat-gala*, and were viewed by him from the top of *Maligá-kanda*. Between the two boulders there is a cleft, with marks to be seen on either flank of the rock, to fit in a cross-beam, from which, tradition says, convicted criminals were hurled down and killed.

Waduwá-gala stands to the north of the above-described hill, and on the right of the high road. It is a cylindrical boulder with the top and bottom overgrown with grass and brushwood. It derives its name from the circumstance that a convict carpenter, who was imprisoned on it, made his escape by cutting steps in the rock. These steps are yet to be seen, and by them access to the summit is gained. The steps begin about ten fathoms from the base of the hill, and in order to get at them a ladder is required, and is easily procurable, made by the villagers at a moment's notice of rough timber, lashed together with jungle rope. Tradition has it that the wife of the carpenter secreted a chisel and a mallet in the *bat-mulla, i.e.*, the boiled rice that is bound up in the spathe of the arecanut, and is the usual manner in which a meal is carried by a native going on a journey away from home and kindred, or conveyed to him to his working

place, by his wife or child. The steps were cut overnight and during the small hours, when—

> The varlets they were all asleep
> And none was there to see,

the escape was effected. The carpenter fled to the village *Waduwáwa*, which is said to derive its name from the fact of his taking refuge there; but alas! he was overtaken, seized, and decapitated. There is a large tank on the summit, into which it is said criminals were hurled.

Kat-gala lies between the above two hills on the left of the road. It is a bare, elongated boulder, and runs north to south. It is so called owing to its having been the halting-place of the pingo-bearers, who deposited their loads on it on their way to the king's reception at this city, when it was a royal residence.

Coins.

Davy says:—

> An antique gold coin, called a Dambadiṇia rhatra, was found in the neighbourhood of Dambadiṇia in the Seven Korles, which was probably struck there when it was a place of royal residence.* This coin exactly resembles in size and appearance the Dambadiṇia chally...... The chally is a copper coin, of which two kinds are to be met with—Dutch challies, which are common; and the Dambadiṇia challies, which are scarce. The characters on this ancient coin resemble more hieroglyphics than letters; the natives are ignorant of their meaning, which has not yet been ascertained.†

Prinsep, in a note on this and other coins sent to him for report by Sir Wilmot Horton, identified it with that found by Colonel Mackenzie at Dipaldinna, which he held to be identical with Dambadeṇiya, adding that Davy did not seem to have comprehended either the devices or the characters on this coin, for he had reversed, in the engraving in his book, the side bearing the inscription. Casie Chitty "rejects the claims of the Singhalese to a Singhalese origin of these coins," and conjectures that they may possibly be of

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* Hardy observes: "There are coins found in various places in the Island that are said to have been minted here in the twelfth century." (*Jubilee Memorials of the Wesleyan Mission*, 1814–64, p. 134.)

† *An Account of the Interior of Ceylon*, pp. 245–6.

Tamil origin, and been struck by King Eláḷa "in commemoration of his splendid conquests in Ceylon."*

British Reminiscences.

In the campaign of 1803, Dambadeṇiya played no unimportant part as a post of defence of the British. The troops under the immediate command of Major-General Macdowall, on their march to Kandy, encamped at Dambadeṇiya on February 11, "all well and in high spirits." Cordiner gives the following particulars :—

The encampment was formed upon a hill on which paddee was growing, and the prospects around it were highly picturesque and delightful. On each side below the camp were pleasant vallies, terminated by ranges of mountains. Owing to a deficiency of supplies, chiefly attributed to the death of Mr. Hamilton, Collector of the Province of Colombo, the army was obliged to halt at this place for four days. A small fort was erected, and a detachment of one hundred men left in it under the command of Ensign Grant. The troops continued to enjoy good health, although the nature of the climate did not seem salutary. The heat during the day was intense and oppressive, and the cold and heavy dews during the night were no less unpleasant, Fahrenheit's thermometer often ranging in the course of twenty-four hours from 60° to 100°.

In a store-house at Dambadenia were found eight hundred parrahs of paddee, fifty of salt, and as many of oil, said to belong to the First Adigar.

On the 25th, "Captain Buchan, of the Ceylon Infantry, marched with a strong party to convey coolies laden with provisions from Dambadenia. None of the natives ventured to approach the capital ; and it was not without difficulty and danger that foraging parties obtained now and then small supplies ; they were often fired upon from unseen quarters, and a few men were daily wounded."

On the suggestion that "His Excellency's performing a tour in the Seven Corales might have a good effect in quieting the apprehensions of the natives and increasing their confidence in the protection which had been promised them by the British Government, the Governor Mr. North, accompanied by Mr. Robert Arbuthnot, Chief Secretary of Government, Mr. Jonville, Surveyor-General, and his personal staff, set out on this journey" on April 28.

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* *Journal, R.A.S.C.B.*, vol. I., p. 85. [The *massa*, figured upside down by Dr. Davy, belongs to Queen Lílávati (Ṣri Rája Lílávati), 1208–12 A.D. *circa*. For the best account of these coins see *Rhys Davids* "On the Ancient Coins and Measures of Ceylon" (Internat. Num. Orient., 1877), pp. 25-33.—B., *Hon. Sec.*]

He arrived at Dambadenia, the principal station in the fruitful Province of the Seven Corales, on the 1st of May. Spacious bungaloes had been prepared for the reception of him and his suite, and temporary barracks were erected for the soldiers who formed his escort. The same day the principal headmen of the neighbourhood waited upon him, declared their satisfaction with the change of government which had taken place, and promised obedience and fidelity to our most gracious Sovereign.

On the 3rd of May, Pelime Palawve, the Chief Adigar, waited on the Governor, with whom he held a long conference, and fully agreed to the terms which had been drawn up in Kandy by General Macdowall and the Second Adigar. Mr. Arbuthnot returned the visit of Pelime Palawve the next day, and tendered to him three copies of the Convention, which he signed and sealed.

Colonel Barbut, who commanded at Candy, having received notice of the intended conference at Dambadenia, embraced the opportunity of paying his respects to Mr. North, and repaired thither escorted by three hundred men of the Malay regiment.......

The Adigar, during his interview with the Governor, was observed to tremble, which circumstance was at that time attributed to fear; but it has since been proved that he then meditated to make Mr. North a prisoner, and was only deterred from the attempt by the force of his escort, and the unexpected arrival of the strong detachment of Malays under Colonel Barbut.

On May 4 " the headmen of the Pale-pattoos, or southern division of the Seven Corales," and those of the "Dolos-pattoo, the northern division of the Province," waited on His Excellency " with expressions of fidelity to the crown of Great Britain and of attachment to his person and government."

At the same time that Candy was taken, the fort of Dambadenia was in a state of blockade. It was a small redoubt, slightly constructed of fascines and earth, and garrisoned by fourteen convalescents of the 19th regiment on their way to Colombo, and twenty-two invalid Malays, commanded by Ensign John Grant of that corps. He was repeatedly summoned by the Candians, headed by the Second Adigar, to give up the post. They sent in a flag of truce every day for upwards of a week; offered him a supply of coolies to carry off the sick, and solemnly declared that they would allow the detachment to march out unmolested, with their arms, and whatever else they chose to take with them. Ensign Grant, though in a feeble state of health, almost incapable of walking, would listen to none of their proposals. He strengthened the shelter of his fortification with bags of rice and stores of provision, and sustained almost an incessant fire from a mob of several thousand Candians for ten days. His men lay sheltered behind a breastwork, and only took an occasional aim at the enemy, when they came very near.

The detachment under Ensign Smellie, which left Colombo on the 26th of June, afforded the small garrison of Dambadenia a seasonable relief on the 30th of the same month.

On the 2nd of July, a reinforcement of one hundred men was sent from Colombo to assist in accomplishing the evacuation of that post. This party was commanded by Captain Robert Blackall of His Majesty's 51st Regiment, who reached Dambadenia in three days, and after destroying in one night a large quantity of stores and provisions in that depôt, completely succeeded in bringing off the garrison.*

Site of the British Fort.

Pridham, Casie Chitty, and other writers refer to the fort as having stood on a hill. According to the information gathered on the spot, this could not be so; it must have stood some distance from *Máligakanda* on a plot of rising ground, approached by a path, which forms the boundary limit between the villages Dambadeṇiya and Muttugala, and branches off to the left of the high road. After going along the path about a quarter of a mile, you turn to the right and you come upon the site overgrown with jungle. There are signs of a moat, which it is said surrounded the fort. The villagers say that the ground here abounds in ruins, and that in its vicinity they could not dig deeper than a foot owing to the rocky foundation and *débris*, probably of the fort, which they came across.

Service Tenure.

Dambadeṇiya is subject to services to the Dalada Máligáwa of Kandy. The following list, which sets out the various *pangu*, extent of high and low land appertaining thereto, the nature of the services, and the amount of commutation, was prepared by the writer from materials kindly placed at his disposal by Appuhami Lekama of Dambadeṇiya :—

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* *Cordiner*, vol. II., pp., 175–219.—In connection with the remarkably brave and determined manner in which Ensign Grant held the fort, it may be mentioned that the natives assert, but unfortunately can give no particulars, that a certain officer in defending this post was shot down, whereupon his wife, with wonderful courage, filled in the breach and assumed command, and held out till succour arrived.

Pangu.	Fields.	Gardens.	Chenas.	Commuted value of Services.
	A. P. K.	A. P. K.	A. P.K.*	Rs. c.
Mapa Mudiyanselage Gamwasam	5 1 6	5 0 2	6 3 9†	73 5
Do. Ottu ...	3 2 1	—	—	46 65
Jayakodi Gamwasam ...	4 0 1	5 0 0	19 1 1	36 50
Do. ...	1 0 0	—	—	11 60
Koralagamwasam	6 1 9 (Meadow 1 p.)	2 2 3	15 2 5	92 15
Dasunakke Gamwasam ...	5 1 2	1 2 8	4 2 1	68 5
Do. ..	1 0 0	—	—	12 0
Alutgamwasam	3 2 5	0 3 1	—	63 10
Ganegoda Kerawel	3 1 8	0 3 6	0 1 0	19 60
Do. ...	3 1 5	2 2 5	5 3 7	37 35
Liyanapatirennẹhẹlage Kerewel	3 2 0	3 0 0	3 3 9	47 30
Kumarapatirẹnnẹhalage do. ...	3 0 0	6 2 4	7 3 0	37 35
Balasuriya Achchilage do. ...	1 2 3	0 2 1	0 3 7	25 70
Mellavalanage Kerewel ...	2 1 0	0 3 0	0 3 0	31 55
Muddiyanselage do. ...	4 0 0	2 0 5	11 1 0	48 95
Wickremeachchilage Kerewel ...	1 3 0	0 3 5	0 1 6	22 40
Madinage	—	1 0 0	0 2 0	0 75‡
Henainge§	4 3 0	0 1 7	0 1 7	41 50
Navan‖	—	—	0 —	1 80
Halagama (Hali people)¶ ...	0 2 5	0 0 5	0 0 8	0 45
Nẹkẹtdureyalage Uliyan** ...	1 2 5	0 2 3	0 2 5	16 18
Nẹketi††	2 3 9	2 0 5	4 3 9	1 25

* A. = amuna; P. = pela; K. = kuruni; 10 k. = 1 p.; 4 p. = 1 a.; 1 a. of paddy land = 2 acres; 1 a. of high land = 40 acres.

Services.

† This pangu pays £1. 8*s.* to the Máligáwa; to the Undiyarala, Vidáné, and Lekama Rs. 5 per annum; to the Diyawadana Nillema every year 3 baskets of fish (*hal messo*), one basket of dried prawns, two baskets of dried fish, two baskets of green peas, two baskets of (*tala*) gingelly seed, one basket of vegetables, altogether ten baskets, 8 seers of cocoanut oil. These presents should be taken by the *alligakareyo*, accompanied by the Lekama and other attendants, to Kandy. The ground share of the fields, Dematagahakumbura, 1 p.; Nidhanamulla, 1 p.; Gorokgahamulla, 1 p.; Divulgahamulla, 1 p.; Kadurugahamulla, 1 p.; Angadenegewela 1 am.; Dunamadala, 1 am.; Paileshavana, 1 am. When the Vidáné visits the village the tenants of the pangu should accommodate him, and two men should be sent to the perahera, in failure of which the pangu should pay a fine of Rs. 5 and 8 pence.

‡ Durava's or Toddy-drawers' pangu, the holders whereof have to pay two ridis, and for gardens for *tuttus*; and for all 1*s.* 6*d.*, equal to commuted allowance 75 cents.

§ To pay three ridis yearly, one seer oil, one pingo per diem, provisions; whenever a messenger arrives in the village ceiling should be put up, piruwata cloth should be given, that is, a clean cloth supplied for use during the stay of the messenger in the village, and whenever he goes for a bath, a bath towel or cloth should be given.

‖ Blacksmiths, to pay yearly 15 *tuttus*, to supply three arecanut cutters and three katupihi (knives).

¶ To pay yearly ten *tuttus*, give a taduppuwa lensuwa—a handkerchief woven by them.

** To take yearly a pingo load of oil to Kandy; whenever a messenger arrives from Kandy at this village to put up an "atuge" (water-closet), to supply him with water and firewood, to prepare hot water; and whenever the Lekama or Vidáné proceeds to Kandy to accompany him.

†† To give yearly two ridis and four handkerchiefs woven by them; and whenever a messenger arrives at the village on duty to give him a handkerchief.

Population.

In the Census of 1871, the total population of the following villages was given as :—

	Houses.		Families.		Males.		Females.		Persons.
Dambadeṇiya, Mapagedara, Marawita	83	...	83	...	281	...	257	=	538

In subsequent decades the following figures were obtained by the Census :—

Year.		Houses.		Families.		Males.		Females.		Persons.
1881	Dambadeṇiya	57	...	57	...	143	...	134	=	277
1891	do.	87	...	87	...	263	...	206	=	469

Buddhist Temporalities.

Under the Buddhist Temporalities Ordinance, No. 3 of 1889, section 4, and by Proclamation in the *Gazette* of November 15, 1889, Dambadeṇiya was constituted a district, consisting of four hatpattus, viz., Dambadeṇiya, Wẹuda, Katugampola, and Dewamedi. Dambadeṇi, as well as the other districts, Yapahuwa and Chilaw, formerly belonged to the Central Province, with a central working committee at Kandy. Subsequently the North-Western Province was formed into a separate Province under the Ordinance, unconnected with the Central, but the division into districts remains the same. The *Gazette* of January 27, 1893, published a list of trustees for the North-Western Province. An amended list was published in the *Gazette* of October 12, 1894, according to which 93 trustees were appointed for Dambadeṇi, 111 for Dewamedi, 95 for Wẹuda, and 120 for Katugampola. Let us hope that the accumulated wisdom of this multitude of counsellors will help towards the satisfactory working of the Ordinance, which, it is to be regretted, has not been productive of the best results, at least in the North-Western Province.

6. The CHAIRMAN remarked that it was interesting to note that the royal capitals of Ceylon, like the one under discussion, remained as capitals only for a very short period ; therefore it was somewhat difficult to place implicit reliance on the details of its grandeur, described in the *Maháwaṇsa*, the writer of which might have, like a

good courtier, drawn from imagination the elaborate details of a most magnificent city. He had visited the place himself and failed to discover anything like the ruins of so important a town. As to the identity of *Siriwarḍhanapura*, about which reference had been made in the Paper, it was probable, as its name implied, that it was applied to more than one royal capital, and thus it may have been applied to Kandy itself.

7. The Meeting terminated with votes of thanks to the writers of the Papers and to the Chair.

COUNCIL MEETING.

Colombo Museum, July 27, 1897.

Present :

Mr. Staniforth Green, Vice-President, in the Chair.

Hon. Mr. P. Coomáraswámy.	Mr. C. M. Fernando.
Mr. J. Ferguson.	Mr. W. P. Raṇasiṇha.

Mr. F. C. Roles, Honorary Treasurer.

Mr. J. Harward and Mr. G. A. Joseph, Honorary Secretaries.

Business.

1. Read and confirmed Minutes of Council Meeting held on May 12, 1897.

2. Resolved,—That the following Candidate for admission into the Society as a Resident Member be elected, viz. :—

Mr. H. B. Preston : nominated by { Mr. O. Collett. / Mr. A. Haly. }

3. Laid on the table a letter from the American Museum of Natural History proposing an exchange of publications.

Resolved,—That, as the publications of the American Museum of Natural History more properly suit the Colombo Museum, the letter be referred to the Museum Committee, and the American Museum of Natural History be notified accordingly.

4. The Honorary Treasurer submitted a letter from the Honorary Secretary, Mr. H. C. P. Bell, C.C.S., regarding Life-Membership.

Resolved,—That the Council regrets it has no power to modify the existing Rules regarding Life-Membership, but will readly recommend that Mr. Bell be elected an Honorary Member of the Society in consideration of the valuable services rendered by him to the Society during a period of sixteen years and upwards.

5. Laid on the table a Paper by Mr. A. Haly, entitled "Some Illustrations from the Fauna of Ceylon of Wallace's theory of Natural Selection."

Resolved,—That the Paper be accepted, and that it be printed and read at a General Meeting.

6. Resolved,—That a General Meeting of the Society be held on the first Saturday in September, and that the following Papers be read :—

(1) "A Geological and Mineralogical Sketch of the North-Western Province," by Mr. F. H. Modder.

(2) "Some Illustrations from the Fauna of Ceylon of Wallace's theory of Natural Selection," by Mr. A. Haly.

7. Considered the advisability of purchasing a typewriter.

Resolved,—That the matter do stand over.

GENERAL MEETING.

Colombo Museum, September 4, 1897.

Present :

Mr. O. Collett.	Mr. G. C. Lee.
Mr. M. Cochran.	Surg.-Capt. Manders.
Rev. J. H. de Winton.	Dr. L. Pinto.
Mr. J. Ferguson.	Mr. F. C. Roles.
Mr. A. Haly.	Mr. L. Walker.

Mr. J. Harward and Mr. G. A. Joseph, Honorary Secretaries.

Visitors : two ladies and five gentlemen.

Business.

1. Mr. HALY took the Chair during the reading of the first Paper, vacating it in favour of Mr. Ferguson.

2. Read and confirmed Minutes of General Meeting held on May 29, 1897.

3. Mr. HARWARD read the following Paper :—

A GEOLOGICAL AND MINERALOGICAL SKETCH OF THE NORTH-WESTERN PROVINCE, CEYLON.

By F. H. Modder.

Prefatory Note.

An eminent authority has observed that "the sciences of geology and mineralogy, &c., in all their branches are but imperfectly understood by the natives." He might with more truth and less modesty have said they were lamentably ignorant of these useful sciences. "Notwithstanding Ceylon is the depository of such an extensive variety of specimens, their attention seems never to have extended beyond the valuable gems and the mineral ores. As to a thousand other subjects, both on the surface of the earth and hidden in the substrata of nature, so interesting to men of science, they have allowed them an almost undisturbed repose, never having exerted themselves either to quarry out a knowledge of their latent properties, or ascertain their intrinsic worth."*

The difficulty of prosecuting the investigation of these important and useful branches of science cannot be better summed up than in the words of Professor Fletcher, though his remarks have special reference only to terrestrial mineral products :—

It is practically, or rather economically, possible to obtain a direct knowledge of only those mineral products of the earth itself which are situated within a mile or so beneath its surface ; that is to say, within a crust having a thickness which is only one-four thousandth part of the earth's radius ; but the detailed investigation of even this limited amount of matter is far too vast for one individual or one science.

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* Quoted by Pridham in a footnote.

In favouring me with a copy of his "Guide Book to the Minerals in the British Museum* (which has been of immense use and service to me), the distinguished author, whose kind sympathy with me in my undertaking I cannot adequately express my gratitude for, wrote to me :—

> I am afraid you will find it difficult to do very much in the examination of your rocks at Ceylon, unless you are provided with a petrological microscope and have the skill and patience and time for the preparation of thin sections for examination by that instrument—

and added with an amount of grim humour :—

> People like yourself, with scientific tastes, can do very useful work in these countries, which are practically inaccessible to those who, like myself, are chained down in these remote regions.

Conscious of the manifold shortcomings in this Paper—the result of desultory work undertaken during the leisure which a busy professional life has stintingly bestowed on me—I should hesitate to submit it to this Society, but that my object is to invite the attention and to excite the interest of the authorities, the capitalist, as well as of the student of Nature, to the rich and unlimited field of scientific research which the vast undeveloped geological and mineral resources of the Island afford.

INTRODUCTORY.

Ceylon has not been geologically surveyed. Davy (1821) made the first real attempt at describing the geology of the Island, but his personal observations were chiefly confined to the interior.† Bennett's work (1843) contains a slight reference ;‡ while Macvicar's comments§ and Gardner's sketch|| (1847) clearly show that beyond a general survey, these scientists had not the opportunity of diving

* "An Introduction to the Study of Rocks," by L. Fletcher, M.A., F.R.S., Keeper of Minerals in the British Museum ; formerly Fellow of University College and Millard Lecturer at Trinity College, Oxford. 1896.

† "An Account of the Interior of Ceylon and its Inhabitants." 2 vols. London, 1821.

‡ "Ceylon and its Capabilities," by J. W. Bennett. London, 1843.

§ A Paper originally read before the Royal Physical Society of Edinburgh, by the Rev. J. G. Macvicar, D.D.

|| Appendix to Lee's Translation of Rebeiro.

deep into the subject. Gygax's labours (1848-49) were mainly directed to the examination and report of the mineral resources of the Sabaragamuwa District.* Pridham (1849) adopted the convenient process of "boiling down" the results obtained by previous writers, and has with characteristic significance seldom condescended to acknowledge the source of his information.† Kelaart's excellent "Notes on the Geology of Ceylon" (1850) have special reference to the laterite formation of the Island and the fluatile deposit of Nuwara Eliya.‡ Baker's remarks (1855) apply almost exclusively to the Nuwara Eliya District.§ Tennent|| (1860) and a host of other writers have either bodily adopted the theories, or more frequently based their conclusions on the investigations of the authors who preceded them, particularly with regard to the alleged discovery "of anthracite, in close proximity to rich veins of plumbago," which did not require much labour on the part of the late Mr. A. M. Ferguson to prove and establish beyond the shade of a shadow of doubt to be "as mythical as Sinbad the Sailor and his gems."¶ The late John F. Campbell of Islay (1876), who was eminently qualified to prosecute the subject from a scientific point of view, was unfortunately prevented by the shortness of his stay in Ceylon from devoting the necessary time and attention to it which the importance of the inquiry demanded.** However, his views, such as they

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* Journal, C.B.R.A.S., No. 3, 1847-48, pp. 1-5.

† "An Historical, Political, and Statistical Account of Ceylon and its Dependencies," by Charles Pridham. 2 vols. London, 1849.

‡ Journal, C.B.R.A.S., 1849-50, p. 210 *et seq.*

§ "Eight Years in Ceylon," by Sir Samuel Baker.

|| "Ceylon: an Account of the Island, Physical, Historical, and Topographical, &c." 2 vols. 1860.

¶ "Plumbago: with special reference to the position occupied by the Mineral in the Commerce of Ceylon; and the question discussed of the alleged existence in the Island of the allied substance Anthracite," by A. M. Ferguson, Esq., C.M.G.—Journal, C.B.R.A.S., vol. IX., part. II., No. 31, 1885.

** "My Circular Notes," by J. F. Campbell, with Appendix on "The Period of Polar Glaciation." 2 vols. London, 1876.

are, are interesting so far as this Province goes, considering that it has hitherto received very little, if any, notice at all from a geological standpoint. Dixon (1881) spent no inconsiderable portion of his leisure in geological and mineralogical researches, but his investigations throw very little light on this Province.* Several local writers have written fugitive papers, dealing more or less with certain portions of the Island. But none of these authors and writers have explored the interior of any of the plumbago mines in this Province—the shaft of one of which alone has penetrated 1,500 feet into the bowels of the earth. These deep-sunk pits have thrown open large and important sections of strata, from which much knowledge can be gathered of our Island crust, hitherto locked up in the sealed book of Nature.

The testimony is conflicting with regard to the actual dimensions of the Island as it existed in "the dark abysm of time," when, according to the *Rámáyana*, the oldest epic in the world, Rámá proceeded to Laṇká with a mighty army, waged a protracted war with Ravana, laid seige to his capital, and carried back in triumph the ravished Sítá, the beautiful queen of the vanquisher, from the jungle fastness, where she remained imprisoned for many a weary year ; and it is a moot point whether the ocean now rolls over once fertile and populous lands, and whether this partial subsidence of the Island caused its severance from the mainland of India, of which it formed part. Avoiding all discussion as to whether our beautiful isle has diminished into its present size by the gradual encroachments of the usurping sea,—

> When were the winds
> Let slip with such a warrant to destroy ?
> When did the waves so haughtily overleap
> Their ancient barriers ?

it is sufficient to state that changes in the relative position of sea and land are said to have occurred on the maritime

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* Journal, C.B.R.A.S., vol. VII., No. 23, 1881, p. 12.

portions of this Province, and they seem to receive support from this tradition :—

In the time of the famed Queen Allirasani, the Gulf of Kalpitiya had no opening to the northward, but communicated with the sea by a channel running in the line of the present Chilaw canal ; that the queen above named used to proceed from Kudremalai to Akkarai pattu by land ; and that a great flood came, buried her palace under the waves, and bursting through a neck of land, converted the lake into a gulf, which form it still retains.*

Lord Valentia, in 1804, testified to the appearance presented by the "singular" island Navakarre,† which showed every sign of having been formerly covered by the sea. In travelling from Puttalam to Arippo, His Lordship drew the conclusion that the bank forming the outer boundary of the lagoon was formerly part of the ocean. The lagoon, he thought, would soon be filled up, and the sea itself removed to a still greater distance.‡

The opinions of Lord Valentia, Macvicar, Gardner, and Kelaart all favour the hope that the whole of Ceylon, particularly the western coast, would gradually rise above the sea level, and that consequently the time, geologically speaking, is not far distant when the Island will again become united with the Continent of India.

Rocks.

The oldest rocks in the North-Western Province, like the rest of the mountain system of the Island, belong mainly to the Archæan or pre-Cambrian age. The prevailing rock is gneiss of a crystalline nature, with no inconsiderable veins of quartz, felspar, mica, and hornblende. This Province forms part of the plain which surrounds the mountain district, and Campbell has likened it to a sea of rolling gneiss with waves on the strike north and south. The dip is

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* Journal, C.B.R.A.S., No. 6, 1853.

† Akkarapattoo, one of the divisions of the District of Puttalam, improperly denominated in the maps Navacarre.—Casie Chitty's "Gazetteer," p. 4.

‡ Mavor's "Collection of Travels," vol. XXVIII., pp. 136–38.

nearly vertical in general. Yet all the outlines are rounded curves. The stone breaks naturally along this curved surface and shells off in thick layers. Distant hills on the same strike are broken to westward. The gigantic bosses which stud the plain rise conspicuously, "so detached from the original chain and so rounded by the action of the atmosphere, aided by their concentric lamellation, that, but for their prodigious dimensions, they might be regarded as boulders."* Chief among these cylindrical masses is the "elephant rock" at Kurunẹgala, where the gneiss is much contorted. The bare gneiss weathers into angular sand and wears into chemical and mechanical "pot holes." The stream which flows out of "the king's bath," a round basin on the elephant rock, is wearing smaller "pot holes" below.

The plain ends with a white sandy beach, in which the rocks are battered. Rocks in the plain have the same forms as rocks in the surf and at sea. If the sea-bottom were raised, asserts Campbell, it would be an extension of the lowlands of Ceylon. From the steamers while approaching and leaving the Island, he says, he saw the usual marks of erosion by streams on the hills and of marine erosion in the plains and in the surf. The low grounds he took for remarkable examples of marine denudation. "Ceylon, at the end of Asia, is exposed in all directions, save one, to the full sweep of the waves of the Southern Ocean. The surf rolls constantly in over a shelving bottom. At the sea-margin and thence to the hills the shelving surface cuts indifferently through the folds in the gneiss."† The folding of the gneiss is by lateral horizontal pressure from east and west, nearly parallel to the Equator.

The rocks, plains, and hills of Ceylon may easily be mistaken for glacial work, but Campbell, who travelled nearly 600 miles in the Island, found no mark or sign of glaciation whatsoever. After careful study he believed them

* Tennent's "Ceylon," vol. I., pp. 16, 17.

† The Period of Polar Glaciation: Appendix to "My Circular Notes," by J. F. Campbell, vol. II., p. 285 *et seq.*

to be the work of the Indian Ocean, aided by a tropical sun and tropical rains.

Supposed Fossil Marks.—Ibbágala, or "tortoise rock," at Kurunẹgala, was thought to be of interest from a palæontological point of view, and the details of the supposed discovery of fossil marks were thus stated :—

Some of these appear to be the footprints of hogs, others those of some feline beasts of prey. The impression of the paws as well as the toes are so well and distinctly marked and continued along whole tracks as not to be mistaken or confounded with any ripple marks or other irregularities produced by the denudation of its surface. Though Ibbágala appears to belong to the class of primitive or plutonic rocks, it appears that there must have been a subsequent super-imposition of sedimentary formations, which, while in a soft state, received the impressions that were rendered permanent by the consolidation or crystallization of their particles. The whole structure of the rock appears to the eye to be composed of hornblende, mica, and felspar, with traces of an impure carbonate of lime.*

The subject was brought up before the Ceylon Branch of the Royal Asiatic Society by Mr. A. O. Brodie, of Puttalam, and Lieutenant Henderson, of the Ceylon Rifle Regiment, both of whom wrote papers ventilating their views, but unfortunately these papers are lost to the world,† and the only particulars available are referred to in the minutes of a special meeting held on March 23, 1850.

In an interesting Paper as to the origin of laterite formation in the Island, Dr. Kelaart wrote in connection with the point at issue—

This subject is now engaging the attention of the Geological Society of London, their notice being attracted to it by the so-called footprints on the gneissic rock at Kurunẹgala, which I have not yet had an opportunity of examining.

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* "Young Ceylon," vol. I., No. 2, March, 1850, p. 49 : Topography of Kornegalle, by T. A. P.

† A careful reference to the transactions, as well as a diligent search by the Honorary Secretary among the papers of the Ceylon Branch of the Royal Asiatic Society, failed to discover these papers. Finally, an application by the writer to the Secretary of the Geological Society, London, to which institution, it was said, the original papers were forwarded, was equally fruitless, and elicited the reply from Mr. L. Belifante, Assistant Secretary : "I can find no trace of the papers to which you refer."

And added in a footnote :—

Since this Paper was written I have examined the rock and found it to be laminated granite, and the marks merely the effects of weathering.*

A verdict which the writer is able to concur in after careful personal verification. It is impossible to conceive how these marks on the most exposed part of the surface of the rock could have been mistaken for those of fossils, the more so when it is considered that no such marks, even if real, could have withstood the ravages and the potent effects of weathering and chemical decomposition, which would have obliterated them altogether. As pointed out by Campbell, "to a given depth the gneiss is daily heated to 100° or more. At night it cools. Expansion and contraction produce something like cleavage on a crackle cup. Mechanical and chemical action of rain and air makes the surface crumble."† As an appropriate conclusion to this subject—so brimful of interest to geologists—I would quote the words of Dr. William King, late of the Geological Survey of India, brother of Mr. Ælian Armstrong King, Government Agent of the North-Western Province :—

It is difficult to tell why there are no fossils in your metamorphic rocks. There may have been very little life at the time of their formation, and that of the lowest forms, and these may have been obliterated by metamorphism or so altered that nothing but the result of their chemical decomposition now remains, *e.g.*, this graphite. I do not think age would have anything to do with the obliteration of vegetable structure, if it ever existed ; metamorphism (which includes a tremendous lot of forces, chemical and otherwise) is quite sufficient.‡

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* Appendix of Proceedings of Meeting, Journal, C.B.R.A.S., No. 5, 1849–50, pp. 336, 337.

† "My Circular Notes," vol. II., pp. 186, 187.

‡ Letter of Dr. King to the late Mr. A. M. Ferguson : appendix to his Monograph on Plumbago, Journal, C.B.R.A.S., No. 31, 1885. Dr. Kelaart writes : "The limestone in which the Ceylon fossils are imbedded is of a very compact and pure form. In one hand specimen we observed a fossil phalange about an inch in length, apparently of a large Saurian reptile. This unique specimen is now in the Museum of the Asiatic Society of Ceylon."—*Prodromus Faunæ Zeylanicæ*, p. x.

Gneiss being the prevailing rock and close at hand is much used for building and other purposes. From a remote period it has been worked into pillars and posts, lintels and doorways for temples and palaces, while the images, in their various shapes and forms to be found in the viháres in the Province, have nearly all been carved out of the same material. Bailey, in his graphic description of the perforated window at Yapahuwa, regretted that such exquisite workmanship as had been lavished on it should not have been expended on more refined material, for instance, the magnesian limestone, which is so abundant in the Province, than on such rough and coarse stuff as gneiss. It must be noted, however, that though the effects of storm and sunshine of six centuries and more have done their worst to the ruins of temple and palace which have been exposed to their influences, yet such ruins as are yet to be seen, for instance, the perforated window of Yapahuwa, show how well they have withstood the ravages of time and weather. Gneiss is also largely used for metalling roads, and a "pocket" on the side of the Kurunẹgala rock, near the Galabandáré shrine, from which the stone is being quarried, affords an excellent section of gneissic rock with its various interpolating veins of quartz, &c.

Quartz in large veins as well as in extensive imbedded masses is of common occurrence. Several of such outcrops are to be met with on the Kurunẹgala railway line.

Dolomite, or crystalline magnesian limestone, which overlies the gneiss, occurs in various parts of the Province. A bed of it has been found to run through the Kurunẹgala District in a somewhat parallel direction, striking generally N.W. by N. to N., and having various dips from 10° to 40°. Dixon, after indicating two outcrops in the Island, the first near Balangoḍa and at Hunuwala, the second through Dolosbáge and Maskeliya, traced the third under the Great Western, at Great Western estate, to be continuous to N.N.W. with Wattegedara and Mẹdakumbura, and probably also with the beds at Gampola and Kurunẹgala. In illustration of a

Paper on "The Rocks and Minerals of Ceylon," he exhibited specimens of dolomite with pyrites and other crystals, and dolomite, large, yellow, free crystals obtained from the Kurunégala District.*

Magnesian limestone is to be met with in abundance, chiefly at Hunugalkadulla (so called after the occurrence of this rock, which is known to the natives as *Hunugal*, or limestone, in such profusion at this village) and Wellowa in the Kurunégala District, and is worked for economical purposes.

The following analyses by Cochran show the composition of the purer forms of crystalline limestone and magnesian limestone or dolomite :—

Composition.	Crystalline Limestone.		Dolomite.	
	per cent.	per cent.	per cent.	per cent.
Calcium carbonate ...	93·79	97·00	50·16	74·52
Magnesian carbonate ...	2·51	1·77	26·00	19·33
Carbonate of iron ...	·68			
Phosphate of lime ...	·15	·23	—	—
Alkalies	·20			
Organic matter and moisture ...	·47			
Silica	2·20	1·00	—	—
Oxide of iron and alumina ...	—	—	3·66	·35
Alkalies and traces of phosphoric acid... ...	—	—	·18	·20
Insoluble silicious matter ...	—	—	19·88	5·35
Moisture	—	—	·12	·25
	100·00	100·00	100·00	100·00

Recent formations are confined to the sea coast which forms the western boundary of the Province. These formations owe their origin mainly to the deposits which the currents make as they come laden with alluvial matter collected along the Coromandel Coast, while in addition to this, as has already been pointed out, the land has been slowly rising from the sea, and terraces abounding in marine shells imbedded in agglutinated sand occur in situations far

* Journal, C.B.R.A.S., 1880, p. 43.

above high water mark, and so the low sandy plains of Puttaḷam and Chilaw have been proportionally extended.

Brodie writes :—

> All along the sea coast there are a series of horizontal beds of *sandstone*, never elevated more than a few feet above the present water level. The rock itself varies in structure and contains numerous enclosed shells and coral limes, apparently identical with species existing in the neighbouring island. The shells in many cases retain the enamel, and are in all respects as if they had just been washed into the sea. At Karativu, fourteen miles to the north, there are various strata of *calcareous* rock, some friable as marl, some highly indurated.*

From Chilaw southwards, exposed during the prevalence of the north-east monsoon, is a *breccia* in process of formation from the agglutination of coral fragments and shells mixed with sand. "Further north at Mádampé, between Chilaw and Negombo," says Tennent, "the shells of the pearl oysters and other bivalves are turned up by the plough more than ten miles from the sea."† Again, "at various points of the western coast, between the island of Mannar and Karativu, the natives, in addition to fishing for chank shells (*Turbenella vapa*) in the sea, dig them up in large quantities from beneath the soil on the adjacent shores, in which they are deeply imbedded."‡

Mr. Haly, the Director of the Colombo Museum, explored the coast opposite Karativu as far as Kudramalai point and collected interesting specimens of the formation, duplicates of which he sent to Berlin with a short account of the coast. The writer has been at some pains to obtain a copy of this account, as well as of the report thereon, which was solicited from the Berlin authorities, but without success. The specimens were—

(1) A kind of laterite, of which fragments that had fallen in the sea became hardened and acquired a polish, showing

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* Journal, C.B.R.A.S., No. 6, 1853.

† Tennent's "Ceylon," vol. I., p. 12.

‡ *Ibid*, p. 20

the constituents of the rock clearly; (2) fragments of the upper part of some lofty limestone cliffs most peculiarly weathered—the cliffs looking like coarse sandstone, but the application of acid revealing their true character; (3) fossil shells, all of the same species, from the base of these cliffs; (4) specimens of the limestone as it crops up through the beach; (5) specimens of the raised beach a few feet above sea level—a conglomerate of recent shells and corals; (6) specimens of shells from the forest soil resting on this raised beach, which is in some parts more than 10 ft. in thickness and full of shells of the same species as are now living on the surface; (7) specimens of the same soil hardened by the action of the sea and again worn by exposure to the atmosphere; pottery and recent fresh-water shells sculptured out in the most delicate manner by the gradual wearing away of the hardened earth; numerous specimens of recent marine shells found in the lower part of the forest soil, and quantities of shells mixed with pottery, showing that a pearl fishery existed here in very ancient times.

The decomposition of Gneiss and its Products.—Although our rocks are destitute of the interest which the presence of fossils would undoubtedly impart to their study, yet the absence of these organic remains is in a way compensated for by the deeply interesting study afforded by that great geological feature of the Island—gneiss, with the various new forms arising from its disintegration. It is no doubt a matter of difficulty for one to comprehend how large mountain masses of hard gneissic rock could change so completely into laterite or moulder away into kaolin and lithomargic clays and finally assume the form of soil. To account for this wonderful transition and mutation under mechanical and chemical influences, we may here inquire into the main constituents of our chief rock, which comprise, according to "Jamieson's Journal," the most common forms of the following minerals:—

		Felspar.		Mica.		Hornblende.
Silica	...	66·75	...	48·00	...	42·00
Alumina	...	17·50	...	34·25	...	12·00
Lime	...	1·05	...	—	...	11·00
Potash	...	12·00	...	8·75	...	A trace
Magnesia	...	—	...	—	...	2·25
Oxide of iron	...	·75	...	·50	...	·25
Oxide of manganese		—	...	·50	...	·25
Water	...	—	...	—	...	·75
		98·25		96·00		98·25

Quartz consists of nearly pure silica, with a trace, however, of alumina acid, sometimes of iron.

None of the varieties which Kelaart classifies laterite or "cabook" into, namely, (1) *Laterite* properly so called, and distinguished as *Quartzose;* (2) *Lithomargic Laterite;* (3) *Detrital;* or (4) *Laterite Gravel*, is to be found in the Province in any shape whatsoever.

Clays.

Lithomarge, which takes its place, is of frequent occurrence. According to Kelaart it is—

A sectile clayey substance of variegated colours. It is chiefly formed of a decomposed felspar and hornblende, whitish when the former prevails, and yellow or reddish when hornblende predominates in the rock from which it is derived, owing to the larger proportion of oxide of iron which the latter mineral contains.*

From the list of mineral constituents which enter into the composition of gneiss, it will be seen that felspar and mica contain the largest amount of alumina, the principal ingredient in the formation of clay. In rocks in which felspar and hornblende predominate the clay formed is much variegated. Pure felspar forms kaolin. It is not, as is popularly thought, the "*kiri-meṭi*" of the natives. *Kiri-meṭi*, literally "milk clay," is a species of potters' clay, and is largely used for pottery. A yellow species of it is used for washing walls. On the other hand, "*makul*" is the

* Journal, C.B.R.A.S., vol. II., No. 5, pp. 210, 211.

purest form of clay to be found in the Province, and is identical with kaolin or Chinese clay. It is found in abundance at Polgahawela, Alawwa, and Wẹuda, in the Kurunẹgala District, and is commonly used in place of lime for whitewashing the laths and rafters and ceilings of houses. Lime does not adhere so firmly, and even when carefully put on drops away in flakes after a time. Makul sticks fast, and it is much easier to wash a roof or ceiling with it than with chunam, which often drops into the eye and causes much inconvenience.

Potters' clay is an abundant substance, but there is a great difference in the nature and quality of it, found in various localities.

Brick clay of a superior kind is met with at Malpiṭiya, three miles from Kurunẹgala on the road to Polgahawela. The brick fields here supplied a large proportion of the bricks to the railway for the construction of bridges, culverts, &c., and Mr. Waring, the Chief Resident Engineer of Railways, considered the material as good as, if not superior to, that supplied by the metropolis. As pointed out by Mr. Cochran, the quality of brick clay may be regarded as superior according as its composition approximates to that of kaolin.

A stratum of very *brackish clay* underlies nearly the whole of the Puttaḷam District and part of the Demala hatpattu. The brackish stratum was probably the bed of a large lagoon, similar to the Puttaḷam lake. In the Puttaḷam District it is near the surface, in the Demala pattu it is at some depth. Fresh water is found only in the generally shallow surface formations locally known as *villus;* once the clay is pierced through the water is brackish, which, however acceptable to deer, sheep, and other animals, is not fit for human consumption.

Mr. J. G. Drieberg, the District Engineer of Puttaḷam, sent me in February, 1897, some specimens of this clay, and wrote that it—

was found 42 ft. below ground level in a consolidated stratum. The pieces sent you were cut out with a penknife, so tough is the material. A cross-section of the surface, as it appeared in the rock-cutting, presented a smooth surface with a varying tint. The effect was pretty in the extreme. The rock was dug at Wannattivillu, 12 miles from Puttalam on the North road to Mannár. The soil above the clay as sent is ordinary black clay, anything but tenacious, and presenting a remarkable contrast to the former. The different layers are sharply defined. The rock itself is situated on the upper high water level of a *villu*. *Villus* are (as no doubt you are aware) natural depressions, generally circular, with mildly shelving banks and fringed with tall forest trees. A bit out of my district, in a place called Kokari, there is a succession of *villus*—quite a chain of them, five in number. The first *villu* is an enormous sheet of water, and saltish. Tradition says that there is an underground channel connecting it with the sea. The next *villu* is called "nalla-tanni-kulam," and the water is pure and sweet.

Casie Chitty, writing of "Quiparawa, a small lake on the east side of Kattakadoo," in the Puttalam District, says :—

The bottom is a *blue clay*, and a person once jumping into it, and coming out covered with this mud up to the knees, obtained for it the name of "*Blue Boots*," by which it is now universally known among Europeans.*

Soil.

The soil of this Province may be generally described as consisting of the results of "the disintegration of the gneiss, detritus from the hills, alluvium carried down the rivers, and marine deposits gradually collected on the shore."

The greater portion of the soil of the maritime districts of Chilaw and Puttalam is a silicious sand, in which the principal ingredients are quartz in the shape of sand or gravel, decomposed felspar in the shape of clay, with more or less oxide of iron. Dr. Davy found this soil to consist of 98·5 silicious sand. Here and there are to be found interspersed black paddy-field earth, potters' clay, or recent marl. Where granite rocks exist a reddish loam occurs, and on the margin of rivers and lakes a rich black mould, well adapted for paddy cultivation, is met with. Deep silt

* "Ceylon Gazetteer," p. 199.

occurs along the shores of the sea and of creeks. In some places a retentive clay exists, and is used in the manufacture of bricks and tiles.

PEATY DEPOSITS.

The only carbonaceous formations, apart from plumbago, which is dealt with under the head of "Minerals," are the peaty deposits in the Kurunẹgala District.

The tanks in the Kurunẹgala District, chiefly those at Kurunẹgala, Wenaruwẹwa, and Tittawela, are covered with floating masses of vegetation of varying sizes and from 2 to 6 ft. in thickness, which are interesting from a geological point of view. It is believed that this is the only provincial division in the Island in which they occur. A large portion of the surface, nearly a fourth of the Kurunẹgala tank, which is about 104 acres in extent, is covered with this floating vegetation, about 6 ft. in depth in some places and of greater depth in other places, possibly identical with what is known in Ireland as the "old widow's tow." This mass is a veritable eyesore, and completely takes away from the effect, both from a picturesque as well as a sanitary point of view, of what has not been inappropriately termed "the lungs of the town." Various schemes have been at different times proposed and tried for getting rid of this mass and many attempts made to remove it, but with very little success.

The floating mass may be divided into three parts. The first is a compact mass, and supports a growth of tank vegetation. The second consists of fibrous roots only, and forms the connecting link between the crust or the first part and the third, which is composed of slushy matter, the vegetable substance being more decomposed, to which it is attached. There is water between this part and the bottom of the tank, with which it is apparently unconnected. The crust is composed of fibrous roots, stems, and partly decayed leaves of grasses and sedges and a variety of aquatic plants. When cut vertically the peat appears stratified with each year's growth, and is evidently the result of many years'

accumulation. Professor Morris, the Assistant Director of the Royal Gardens at Kew, when Assistant Director of the Royal Botanical Gardens at Péradeniya, on a visit to Kurunẹgala in 1878 on the orders of the Ceylon Government, could not identify the most important plant which enters largely into the floating mass, as it was not sufficiently grown to enable him to do so. He identified among the grasses *Panicum myurus*, *Panicum interruptum*, and members of the *Carex* and *Cyperus* families. The matted growth of these are mixed with *Ceratophyllum*, *Polygonum*, *Zimnophila*, *Marsila*, and *Utricularia*. During the dry weather most of the grasses and sedges wither, and their dead leaves accumulating around the floating stems, at times 20 to 30 ft. long, serve to increase periodically the size of the mass and to gather around them the fine mud and other deposits brought in by the rains.*

Dr. Morris found the residual ashes obtained by burning the peat rich in potash and other salts, and, mixed with soil he thought they ought to prove a useful manure for estates and gardens. Mr. Drieberg, the Superintendent of the Agricultural School, Colombo, to whom the writer forwarded three cases of specimens, reported as follows :—

Specimen of case No. 1 contained 6 per cent.
Specimen of case No. 2 contained 13 per cent.
Specimen of case No. 3 contained 10 per cent.

Mr. Drieberg observed that, unless in the neighbourhood of the deposits, there was no special value to be attached to peat as an organic manure for mixing with poor soils, or the ash got from it on account of the potash and other mineral ingredients it contains; it had no great advantage over ordinary organic refuse on the one hand or wood ashes on the other.

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* The chief characteristics exhibited by a section of workable peat moss, and referred to by Professor James Geikie, F.R.S., in a Paper "On the Buried Forests and Peat Mosses of Scotland, and the Changes of Climate which they indicate" (Trans. R. S. Edin., vol. XXIV., 1867), are strikingly identical with the above description.

The peat to be met with in this Province is of recent origin—old peat deposits, some of which date back to the glacial period, apparently do not occur in the Island—and the conditions which favour its formation locally are restricted to limited areas. "The question therefore," says Mr. Drieberg, in reply to the writer's inquiry, "as to the availability of peat for fuel purposes practically does not affect us, but there are other economic uses for which such local and limited supplies of peat—if, indeed, it would be wise to encourage its formation—may be available. Owing to its absorbent properties, it is a useful medium for absorbing liquid manure, &c. Peat moss litter, as exported from Germany, is in fact largely used in England in byres and stakes, while it is also a very effective deodorizer."*

Dr. H. M. Fernando, the Government Analyst, Colombo, to whom a sample of the Kurunẹgala tank water was sent for analysis by the writer in December, 1896, in kindly furnishing the following report, added in a note :—

The tank water is highly impregnated with vegetable matter, and should be looked upon with great suspicion, especially in a fever district.

Colour, slight yellow. Smell, fœtid. Taste, unpleasant. Sediment, slight sediment containing infusoria and protozoa. Chloride grains per gallon, ·3 grain. Nitrates, trace. Saline ammonia, parts per million ·01. Albumenoid ammonia, parts per million ·24.

Remarks.—This sample contains a large proportion of organic matter, probably of vegetable origin. Unfit for drinking purposes.

METALS.

We know little or nothing of the metaliferous nature of our rocks, for beyond the investigations of Gygax in 1847, which were confined to the hill district south of Adam's Peak, and his report, which scarcely enlarged the knowledge previously possessed by us on the subject, no examination has been made of the veins and deposits of our rocks.

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* For a full description of the "Peaty Deposits in the Kurunẹgala Lake," and the steps taken to remove them, see an article by the writer in the "Ceylon Agricultural Magazine," 1896.

Gold.—However slight may be the proof afforded by such names as Randenigama, Randeniya, Rangalapola, Rangama, Ranmutugala, Rantẹtikanda, Rantẹtiyáwa, &c., which are said to derive their origin from the existence of auriferous ores in these places, and the doubtful testimony furnished by "*Wadula-pot*," which relate in glowing terms of fabulous wealth and countless treasures buried deep in the bowels of the earth seldom accessible to man (!), the theory that gold is an unknown quantity in the Island has been falsified by explorations in this Province. Davy in his work made the unqualified averment that the precious metals were not to be found in Ceylon. Commenting on this statement, "it is amusing," says Sir Samuel Baker, "to see the positive assertions of a clever man upset by a few uneducated sailors."* In March, 1854, seven discharged seamen from the "Faithful" and the "Martin Luther," namely, Henry Temple, William King, Charles Langley, James Mabley, John Wilson, John Philips, and William Bradley, with experience of gold-digging in California and Australia, touched at Colombo and made a trip towards Kandy by the old road. When about half way it struck them, from the appearance of the rocks in the uneven bed of the Mahá-oya, that gold must exist in the sands. They had no geological reasons for this opinion, but the river happened to be very like those in California in which they had been accustomed to find gold. They accordingly set to work with a tin pan to wash the sand, and, as Baker exultingly records, "to the astonishment of every one in Ceylon, and to the confusion of Dr. Davy's opinions, they actually discovered gold!" The scene of the operations, called "Bradley's Diggings" after the original discoverer, lay at Giriulla, 25 miles from Kurunẹgala, in a sudden bend of the Mahá-oya from a south-westerly to a north-westerly course. In the centre of the bed stood an island composed of "diluvial" deposits of smooth gneiss, quartz boulders, sand, and gravel, cemented

* "Eight Years in Ceylon," second edition, p. 49.

together by a reddish clay. The natives said that this island formed part of the mainland, whence it was severed by the heavy floods of 1838. The pit from which the seamen washed the deposit was in the upper part of the island, which divided the stream into two parts during the monsoon. The deposit was from 2 to 3 ft. deep to the solid rock bottom, 300 ft. long, and 70 ft. broad. The gold was distributed throughout the island, but was more abundant in the rock crevices. The specimen submitted for examination to Dr. Ellery, according to his report—

weighed 7½ grains, and consisted of small pieces of yellowish quartz, a black powder resembling coarse emery, and several scales of yellow metallic-looking substance. The application of a magnetic ore separated about one-third of the black powder, which consisted of magnetic ore. One-half of the residue was acted upon by boiling in nitric acid without effect; the addition of muriatic acid dissolved the metal, yielding a golden yellow solution. This, on the addition of the subjoined tests, afforded the following results:—

No. 1.—Chloride of tin gave a copious deep purple precipitate.
No. 2.—Solution of sulphate of iron, a dark-brown looking precipitate of metallic gold.
No. 3.—A very weak solution of tincture of opium gave a bright yellow transparent fluid.

Dr. Ellery was of opinion, from the appearance of the specimen and from the result of the chemical examination, that it certainly contained gold.

The discovery of gold created a regular *furore*. Crowds of enterprising speculators and inquisitive visitors rushed daily to the diggings for purposes of prospecting for gold or witnessing the operations. Thereupon Government, with more haste than discretion, issued a notice that the Superintendent of Police (Macartney) had received instructions

"not to allow any persons to dig, excavate, or to carry on any mining operations under whatever name or pretext, with the exception of the seven individuals already engaged with the cognizance of Government, and of any other that may hereafter be especially licensed for that purpose."

Four days afterward, to wit, on the 17th of March, 1854, a second Government Proclamation was published, informing

the public that the Governor (Sir George Anderson) was pleased to appoint T. C. Power, Esq., Assistant Government Agent of Kurunẹgala, to be "Special Commissioner for the issue of licenses to dig, search for, and remove gold on any land belonging to the Crown." A fee of ten shillings was to be charged for every such license, which was to remain in force for one month from the date of issue. These notifications were manifestly too premature, and no wonder that not one single license was applied for!

In addition to the Gold Commissioner and the Superintendent of Police, a *posse* of the local constabulary and a section of the Ceylon Rifles were stationed at the "diggings," which, from being the undisturbed haunt of the alligator, at once rose from its primeval solitude into a busy and "fashionable watering-place!" A piece of gold was produced before Mr. Power by a headman, who reported to have found it at Dambadeṇiya, eight miles above the "diggings." Dr. Ellery pronounced the gold to be without alloy.

The quantity produced at the "diggings" was, however, small, but the diggers were sanguine of success, and were making preparations for working on a more extensive scale, when a combination of adverse circumstances, chief among them being violent thunderstorms, floods, and jungle fever, conspired towards the abandonment of the enterprise. Curiously enough the neighbourhood of the "diggings" was the spot where Davy closed his series of journeyings in the interior, one of the results of which, he declared with a show of scientific authority, was, that no gold existed in Ceylon!

In 1881 Mr. A. C. Dixon—

"met with gold in scattered grains, free by natural causes from its matrix, in the alluvium of the Dẹduru-oya beyond Kurunẹgala. The particles were exceedingly small, and other metallic matters were not uncommon. This must have come from the quartz reef further up the hills."*

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* "Gold in Ceylon," Journal, C.B.R.A.S., 1881.

In the same year the late S. Jayatilleke, Mudaliyár, of Kurunégala, submitted for analysis some interesting specimens of quartz and plumbago streaked with auriferous-looking substances found in that district. The streak of green glittering matter in the plumbago was reported to be *copper*, while the quartz was freely mixed with pyrites, but of a very promising character, and in one instance Mr. Dixon thought it must be auriferous.*

Mica mistaken for Gold Dust.—Col. Campbell records the following interesting discovery in the Kurunégala District, but the particulars are too vague to identify the spot :—

> After nearly an hour spent in search of it [the fairy well] I at last came to an open space of fine green sward close to the bank of the river, which was there delightfully shaded by some tall trees, in the midst of which was a circle of about seven or eight feet in diameter, entirely covered with a brightly shining foliated substance of a red and yellow hue ; and in the very middle of it, to my surprise and delight, I saw a beautiful diminutive *jet d'eau*, throwing up water of the same bright, shining colour, fully three or four inches above the surface, and which fell as it were in a circle of little sparkling drops. I stood for some minutes really enchanted with the beauty of the extraordinary fairy well, the water of which seemed full of gold particles. I therefore set to work and strained out a small quantity of them, pouring the water through my handkerchief, when to my increased delight they looked "for all the world" like real gold dust.

Campbell filled a quart bottle with some of the "golden" water and despatched it with a very small quantity of the dust to Dr. Farrell, the Deputy Inspector of Hospitals, whose opinion was that it was "only the very finest specimen of mica he had ever met with."†

All that has been said and written about the existence of gold in the Province and the results of explorations hitherto made point to but one conclusion, that though gold is to be found, it is not to be met with in sufficiently paying quantities so as to encourage the capitalist to embark on the venture.

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* Ferguson's "All about Gold, Gems, and Pearls," second edition, p. 179.

† "Excursions, Adventures, and Field Sports in Ceylon," vol. II., pp. 114, 115.

Silver.—Tradition says that when King Dutugẹmunu was engaged in constructing some important public works he ran short of funds, and in order to avoid his labourers who were clamouring for their wages, he fled into the jungle. Here he chanced upon a vein of silver, which supplied him with ample means to satisfy his pecuniary wants. In grateful remembrance of the miraculously opportune and fortuitous discovery, he is said to have built over the site of the vein what is known as "Ridi Viháré"—the silver temple—eleven miles from Kurunẹ́gala, and endowed it with extensive property. The "*Kaḍaim-pota*" records that in the Dẹ́wamẹdiraṭa—the country so called from its situation between two rivers, the Dẹduru and Mi oyas, and corresponding in some measure to the modern Déwamẹdi-hat-pattu of the Kurunẹ́gala District, which, however, owing to its altered boundaries does not embrace the whole of the division included by these rivers—there is silver to be found in a cave.

Iron exists in different forms, and is pretty generally distributed. It is chiefly met with in the following species: Iron pyrites, hematite, and bog-iron. "The only ore heard of," says Brodie, writing of the Puttaḷam and Chilaw Districts, "is bog-iron, procured in considerable quantities a few miles to the south of Chilaw and smelted by the natives, who, it appears, observed its reproduction."*

Casie Chitty observes that Yágam pattu "abounds in iron ore, and derives its name from that circumstance."†

There are numerous caves and vast caverns in the Crown forest known as Penirendawa in the Chilaw District, from which the natives assert iron was dug out in the olden days. These abandoned recesses afford a secure rendezvous to runaway criminals, who take shelter in them to evade justice. In October, 1896, these caves were searched as likely places for the Chilaw murderers who had escaped from jail, but without success, the stay of the fugitives there having been very short.

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* Journal, C.B.R.A.S., No. 6, 1853. † "Ceylon Gazetteer," p. 223.

As testified by Tennent, "remains of ancient furnaces are met with in all directions similar to those still in use amongst the natives. The Siṇhalese obtain the ore without the trouble of mining: seeking a spot where the soil has been loosened by the rains, they break off a sufficient quantity, which in less than three hours they convert into iron by the simplest possible means. None of their furnaces are capable of smelting more than twenty pounds of ore, and yet this quantity yields from seven to ten pounds of good metal."* Since, however, the imported article is so cheap and certainly superior to that locally obtained, smelting may be considered as an operation which is numbered with the past.

MINERALS.

Plumbago is the only mineral of commercial value and importance. It is found principally in the Kuruṇégala District. As a medicinal ingredient plumbago takes a prominent place in the Siṇhalese pharmacopœia, and in the ceramic art it was used largely for glazing purposes, from which we may argue that it was known to the natives for a long time past; but from a commercial standpoint plumbago mining may be considered as of comparatively recent origin, having been started early in the "seventies" in the Kuruṇégala District.†

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* "Ceylon," vol. I., p. 30.

† Col. Colebrooke, one of the Commissioners of Ceylon affairs, stated in his report in 1829 that provision had been made for the delivery of cinnamon and blacklead in the Kandyan Provinces (which included the Seven Kóralés or Kuruṇégala District) at fixed rates; but reference to the "Ceylon Calendars" shows no mention of plumbago in the Island till 1831. It assumed importance as an article of commerce in 1834. Mr. Parsons, Government Agent of the North-Western Province, wrote in 1870: "The question of plumbago-digging is one of great importance, and anxiously looked forward to by the residents as well as those who desire to dig for it. The delay in the matter is greatly to be regretted. It was brought to notice many months ago and, I believe, referred to the Queen's Advocate, but no decision has yet been arrived at."—*Administration Reports, 1870.* Plumbago is spoken of in 1875 as having been found at Mipiṭiya, about 18 miles from Kuruṇégala, as if the discovery had been made recently.—*Administration Reports, North-Western Province, 1875.*

The chief seat of the industry lies within a radius of about six miles between the road from Kurunégala to Dambulla and the Mátalé range of hills. The plumbago-producing villages are Paragoḍa, Madurágoḍa, Uḍattápola, Mípiṭiya, Rágedara, Uḍakendawela, and Doḍangaslanda. Plumbago was reported to have been discovered on the road to Negombo, south-west of Kurunégala, and at Naramana, on the road to Balalla, 18 miles north of Kurunégala. The "Blue Book" for 1892 gives Nalaulla and Nakkawatta in addition to the above villages. Operations are carried on here on a small scale.*

The following is a list prepared at the Kurunégala Kachcheri of some of the pits, with the locality in which they lie, and name of owner :—

Paragoḍa, in Máduré Kóralé.

Súriyagaha-patala	...	N. D. P. Silva
Bógaha-patala ...	...	Do.
Kẹkunagaha-patala	...	Do.
Haba-patala ...	...	D. G. Attygalle, Muhandiram

Madurágoḍa, in Ihalawisideké Kóralé.

Raṭamiris-hena-patala	...	N. D. P. Silva and others
Tepugolla-patala	...	Do.
Raṭamiris-hena	...	Do.
Kẹtagalagaha-patala	...	Do.
Koḍigaha-patala	...	J. Clovis de Silva
Kahaṭagaha-patala	...	D. C. G. Attygalle, Muhandiram
Rukattanagaha-patala	...	Do.
Silvat-hena-patala	...	L. Mendis and others
Tibbotu-hena-patala	...	J. de Mel
Galkanuwagawa-hena	...	Do.

Udattápola.

Wéwẹlhena-patala	...	N. D. P. Silva

* For an account by the writer of the working of the mines in the Kurunégala District, see article in the "Ceylon Literary Register," new series, vol. II., reproduced from the *Ceylon Observer*. An Ordinance has since been passed on the supervision of mines, &c.

Mipiṭiya.

Mígahamulahena-patala	...	N. D. P. Silva
Raṭagorokgaha-patala	...	Do.
Miniran-patala	...	Attygalle Muhandiram
Miniran-kanda-patala	...	The Crown
Midella-hena ...	...	Jacob de Mel

Udakendawela.

Hurigolla-hena-patala	...	L. Mendis and others
Dambagolla-patala	...	Jacob de Mel
Dambagolla-patala	...	L. Mendis and others
Demaṭagolla-patala	...	Jobsz and others
Demaṭagolla-patala	...	Jacob de Mel

Seekers after plumbago are guided by no better indication than the surface soil or pieces of the mineral cropping up through the fissures of the rock. Here is just the case where a Government geologist might afford valuable aid in developing a most important industry, and be able to point out with much confidence to undeveloped Crown lands likely to prove of great value for their beds of plumbago, while his advice to private proprietors might save much time and money in trial pits, surface diggings, and generally useless and vain exploration.

The usual mode of setting to work when there are signs, which to the knowing ones prognosticate a find of plumbago sooner or later, is to drive a shaft (*miniran patala*), say 12 ft. by 6 ft., until the mineral is reached, failing which galleries are run (*doná kẹpima*) till a vein is found, and the vein is followed downwards and horizontally so long as it is possible to contend with the flow of water in the mine. Operations are then stopped and galleries driven, and this goes on while the lamps burn; but the moment the lamps are extinguished by the gases collected in the galleries, working in that part is suspended and resumed upwards, the abandoned portions being re-filled with the *débris* from the mine. In other cases, instead of sinking a shaft a large open cutting is made, in which the vein is followed and galleries run as occasion may require. Slightly improved methods have from time to time been employed, but the old order of things

remains, the pit owners being painfully conservative. When rock is encountered in the course of excavation it is blasted by means of dynamite. It is in the blasting operations that most of the accidents occur, chiefly through carelessness. The report, by the way, caused by the explosion, sounds at the mouth of the pits at Rágedara like that produced by a cracker, but at Gokarella, which is two miles thence, and perhaps on a level with the bottom of the pits, the full effect of it is heard.

Plumbago does not occur in even or regular beds, but varies in thickness, both vertically and horizontally. It may occasionally be more than a fathom thick, but thinning out very often to a few inches in all directions. Very good plumbago is often found near the surface, but as a general rule the lower the digging operations go the better the quality and the larger the quantity of mineral.

The principal pits are at a distance of between 12 to 16 miles north-east of Kurunẹgala on a small range of hills known as Mípiṭiya-kanda, about three miles long and about a mile to the west of the Nẹvugala range, 3,000 to 4,000 ft. high, and almost parallel to it. The major axis of the Mípiṭiya range runs, as in the case of the Mátalé hills, north and south. The pits are being worked at Mípiṭiya, which is at the southern end, and at Rágedara, at the northern end of the range. Paragoḍa and Madurágoḍa lie about ten miles farther south, and are approached from Wẹuda, eleven miles from Kurunẹgala on the road to Kandy.

The general strike of the veins or bed of plumbago in the Mípiṭiya range is east and west, nearly vertical in position. The general direction of the "underlie" in the Rágedara beds is south-east and in the Mípiṭiya beds north.

The late Mr. A. M. Ferguson writes :—

The Rágedara hill seems to be permeated in its whole extent by generally horizontal veins of the richest plumbago, associated with snow white crystalline to semi-opaque quartz, the latter occasionally showing specks of garnet and bands of soapstone.

When His Royal Highness the Prince of Wales was in Colombo in 1870, Mr. De Mel exhibited from Kurunégala what was supposed to be the largest mass of pure plumbago ever shown in this or any other country, its weight being only 14 lb. short of 6 cwt. For this unique specimen a sum of £50 was offered. It was subsequently sent to the United States, and is understood to have been placed in the Philadelphia Exhibition and finally in an American Museum. As regards the generality of pits, Mr. Ferguson estimated—

> the extraneous matter in the shape of heart and rock brought to the pit's mouth as equal to a half, about 10 or 15 per cent. being the proportion carried to Colombo and separated from the ore in the plumbago yards. The estimate of Mr. W. P. Fernando, an experienced plumbago merchant, of foreign matter brought to Colombo is 5 per cent. for pieces of quartz round which plumbago adheres and 2½ per cent. for minute fragments of silica, iron, &c., mixed with smaller pieces and dust.

Plumbago occurs in various different forms. Dana enumerates—

(*a*) Foliated.
(*b*) Columnar and sometimes radiated.
(*c*) Scaly, massive, and slaty.
(*d*) Granular massive.
(*e*) Earthy, amorphous, without metallic lustre, except in the streak.
(*f*) In radiated concretions.

Commercially plumbago is divided into (1) lumps, (2) chips, and (3) dust; and distributed into three classes: (1) foliated, laminated; (2) hard, short-grained, and dull-looking; (3) slaty, hard and stony, with about 30 per cent. of clay in it, termed by the natives "bora."

Again, it is distinguished, for trading purposes, into various qualities, such as—

(1) X: best.	
(2) X b: second best.	Bison }
(3) B.	Palm } These are private
(4) B E.	Cobra } marks.
(5) E.	Manx }
(6) S I O.	

In the following analyses by Mr. C. Mene, reproduced by

Cochran from Dana's "Mineralogy," Ceylon plumbago does not appear to the best advantage, being in all probability not represented by a very good local sample :—

	Specific Gravity.	Carbon.	Volatile Matter.	Ash.
Ural, Mt. Alibert ...	2·1759	94·03	0·72	5·25
Cumberland, England ...	2·3455	91·55	1·10	7·35
Mugran, Bohemia ...	2·1197	91·05	4·10	4·85
Zaptan, Lower Austria ...	2·2179	90·63	2·20	7·17
Savarbock, Bohemia ...	2·3438	88·05	1·05	10·90
Fagerita, Sweden ...	2·1092	87·65	1·55	10·80
Cumberland	2·5857	84·38	2·62	13·00
Passan, Bavaria ...	2·3032	81·08	7·30	11·62
Buckingham, Canada ...	2·2863	78·48	1·82	19·70
Cumberland	2·4092	78·10	6·10	15·80
Ceara, Brazil	2·3865	77·15	2·55	20·30
Passan, Bavaria ...	2·3108	73·65	4·20	22·15
Madagascar	2·4085	70·69	5·18	24·13
Ceylon	2·2659	68·30	5·20	26·50
Pissie, Nantes-Alpes ...	2·4572	59·67	3·20	37·13

	Composition of 100 Parts of Ash.				
	Silica.	Alumina.	Oxide of Iron.	Magnesia and Lime.	Alkalies and loss.
Ural, Mt. Alibert ...	64·2	24·7	10·0	0·8	0·3
Cumberland, England ...	52·5	28·3	12·0	6·0	1·2
Mugran, Bohemia ...	61·8	28·5	8·0	0·7	1·0
Zaptan, Lower Austria...	55·0	30·0	14·3	—	0·7
Savarbock, Bohemia ...	62·0	28·5	6·3	1·5	1·7
Fagerita, Sweden ...	58·6	31·5	7·2	0·5	2·2
Buckingham, Canada ...	65·0	25·1	6·2	0·5	1·2
Cumberland ...	62·0	25·0	10·0	2·6	0·4
Passan, Bavaria ...	53·7	35·6	6·8	1·7	2·2
Cumberland ...	58·5	30·5	7·5	3·5	—
Ceara, Brazil ...	79·0	11·7	7·8	1·5	—
Passan, Bavaria ...	69·5	21·1	5·5	2·0	1·9
Madagascar ...	59·6	31·8	6·8	1·2	0·6
Ceylon	50·3	41·5	8·2	—	—
Pissie, Nantes-Alpes ...	68·7	20·8	8·1	1·5	0·9

The following analyses of Canadian and Ceylon graphites, reproduced from the "Mineral Resources of the United States," by Mr. J. A. Walker, and quoted by Mr. Ferguson

in his monograph on "Plumbago," do full justice to the Ceylon mineral, and the analyses may be regarded as representative of the best qualities of lump plumbago in both cases :—

	Specific Gravity.	Volatile Matter.	Carbon.	Ash.
		Per cent.	Per cent.	Per cent.
Canada, Buckingham : vein graphite ; variety foliated ...	2·2689	0·178	99·675	0·147
Canada, Buckingham : vein graphite ; variety columnar ...	2·2679	0·594	97·626	1·780
Canada, Grenville : vein graphite ; variety foliated ...	2·2714	0·109	99·815	0·070
Canada, Grenville : vein graphite ; variety columnar ...	2·2659	0·108	99·757	0·135
Ceylon : vein graphite ; variety columnar	2·2671	0·158	99·792	0·050
Ceylon : vein graphite ; variety foliated	2·2664	0·108	99·679	0·213
Ceylon : vein graphite ; variety columnar	2·2546	0·900	98·817	0·283
Ceylon : vein graphite ; variety foliated	2·2484	0·301	99·284	0·415

The following analyses* by Cochran of Ceylon plumbago dust show the total percentage of graphite and of sulphur, the latter being regarded as an objectionable impurity :—

	1	2	3	4	5	6	7
Carbon, per cent. ...	99·3	99·00	98·05	98·00	97·08	95·03	95·09
Sulphur, per cent.	trace	trace	0·02	0·06	0·09	0·59	0·83

	8	9	10	11	12	13
Carbon, per cent. ...	91·35	90·05	88·06	88·06	88·75	87·04
Sulphur, per cent. ...	0·75	0·02	0·19	0·38	0·72	0·75

* "Manual of Chemical Analysis," p. 262. Mr. Ph. Freudenberg writes : "Cochran's analyses were made of plumbago *dust*, as he calls it, inasmuch as we, for instance, grind the lumps to powder before sending them to Mr. Cochran to ensure evenness of sample ; but no 'dust' in the commercial sense contains carbon up to 90 per cent."

The following analyses of dust plumbago, also by Cochran, in which the carbon is estimated by the loss of weight when the mineral is burned in oxygen gas, show an inferiority in the samples in point of percentage of carbon to those already quoted :—

	Per cent.			
Loss on ignition in air ...	3·1	2·2	3·5	1·8
Ash	22·4	22·6	28·4	16·2
Graphitic carbon ...	74·5	74·8	68·1	82·0
	100·0	100·0	100·0	100·0
Sulphur	0·17	0·07	0·22	0·45

The following analyses made by Cochran of plumbago dust exhibit the percentage of iron as well as the other ingredients :—

Loss on ignition in air	1·7	1·00	1·5	2·10	0·95	1·35	1·5
Ash	6·0	5·00	17·8	7·60	7·00	8·60	17·8
Graphitic carbon ...	92·3	94·00	80·7	90·30	92·05	90·05	80·7
	100·0	100·00	100·0	100·00	100·00	100·00	100·0
Iron	0·22	0·74	1·01	1·08	1·340	2·33	2·66
Sulphur ...	0·05	0·01	trace	0·77	·014	0·49	0·51

Mr. Ph. Freudenberg adds the following analyses :—

Loss on ignition in air	2·65	1·90	0·90	2·45	3·87
Ash	12·00	7·80	4·80	34·00	10·00
Graphitic carbon ...	85·35	90·30	94·30	63·55	86·13
	100·00	100·00	100·00	100·00	100·00
Iron... ...	3·52	2·45	0·47	4·56	5·17
Sulphur ...	0·32	2·22	0·24	0·09	3·98

The following interesting analysis by Walker shows the various uses to which plumbago is put :—

Purposes for which used.	Sources of Supply.*	Per cent.
Crucibles and refractory articles, as stoppers and nozzles	Ceylon, American ...	35·00
Stove polish	Ceylon, American, German ...	32·00
Lubricating graphite ...	American, Ceylon ...	10·00
Graphite greases ...	American	6·00
Foundry facings, &c. ...	Ceylon, American, German ...	8·00
Pencil leads	American and German ...	3·00
Graphite packing ...	Ceylon, American ...	3·00
Polish shot and powder ...	Ceylon, American ...	2·00
Electrotyping ...	American, Ceylon ...	0·25
Paint	American	0·05
Miscellaneous : piano action, photographers', gilders', and hatters' use, electrical supplies	American, Ceylon ...	0·25
		100·00

Considering the fact that nearly three-fourths of Ceylon plumbago, whose average shipments may be safely put down at 12,000 tons per annum, and which carries the palm for superiority among all known varieties of graphite in the world, is directly shipped to Great Britain, Germany, and the United States, and principally used by the great factories at Battersea and Jersey City; and in view of the circumstance that a large proportion so exported is contributed by the Kurunẹgala District—we cannot but contemplate with the deepest interest the important part which our chief mineral product, or rather the only mineral product of any commercial value, plays in the multitudinous manufactures of the world.

It would doubtless make the hairs of our semi-nude toiling miner stand on end like "the quills of the fretful

* Mr. Ph. Freudenberg notes: "Sources of supply ought to have Germany and Austria added in every instance, and for pencil lead Russia ought to be given."

porcupine," if, when he brings up to the surface a ton of plumbago, he could realize the manifold uses towards which he unwittingly contributes by the fruits of his perilous labour in the dark depths of the earth. In the exhaustive list of uses already quoted, "*kaḷu-miniran*" forms the chief constituent, and though coming nearer home, its identity may be concealed under the thin guise of such sentimental names as "Servant's Friend," "Prize Medal Lustre," or "Halse's Roman Lustre," without it "the most elaborate kitchen range would soon become unsightly, the trim parlour grate blush with rust, and the cottager's 'wee bit ingle' would leave off 'blinkin bonnily.'"*

For these reasons well may we "lay the flattering unction to our soul" that the Kurunẹgala District—

> forms the main source of supply of an article so useful in the industries and elegancies of life, the appliances of peace and war, and the pursuits of the artist and literary man, not only to countries in the Eastern Hemisphere, but to the regions of the Far Western World.†

Minerals associated with Plumbago. — An interesting report on specimens of plumbago, quartz, and iron pyrites from a mine at Rágedara was made by Mr. A. Murray of the Public Works Department, and will be found as an Appendix to Mr. Ferguson's "Monograph on Plumbago."

Of the minerals dug out of plumbago mines, there are a number which doubtless have some value, but with which the natives have no acquaintance, and consequently they are sometimes thrown away. Amongst these minerals may be enumerated *pyrrhotite*,‡ from which the nickel of commerce

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* American paper.

† Ferguson's "Plumbago," &c., p. 237.

‡ Mr. C. E. Ferdinands, of Kurunẹgala, who has a share in the Hurigolla and other mines, sent a specimen of this mineral to his London agents, who reported that iron pyrites were used to make sulphuric acid, but at that time, nine years ago, they had no commercial value. The specific gravity of this ore is almost the same as that of gold. It does not dissolve in nitro-hydrochloric acid. It was put to the test.

is extracted, but whether it is nickeliferous in Ceylon it is difficult to say. *Steatite* or soapstone, which, if it occurs in masses, might be worked into ornaments, plates, cups, and saucers as in Bengal. *Magnetite (feroso-feno oxide)*, showing strong polarity, and which may perhaps be found to be a richer ore of iron than the "black sea sand" of the coast, which experts thought some five and twenty years ago could not be remuneratively worked. *Chalcopyrite*, containing such rare elements as columbian or niobium and yttrium, zirconium, mica, gold, and numberless other minerals.

If these metals and minerals which are found in association with plumbago occur to any appreciable or rather workable extent, how many valuable additions might we not have to our local arts and manufactures, and even to our exports; and may be, some day we shall hear of metallurgical operations in the Island, and of gold, nickel, and manganese and iron being extracted from their ores!

GEMS.

Beyond the garnets and amethysts* which are common in the gneiss, cinnamon stone, which is properly a variety of the former, rock crystal, and tourmaline, and a number of others of no great value, this Province is sadly deficient in gems.

SALTS.

Nitre Caves. — Davy enumerates the following places in this Province in which saltpetre is produced and in which it has been manufactured. The names are said to be—

not those of the nitre caves themselves, which are generally nameless, but of the nearest inhabited places, which are in many instances several miles remote, most of the caves being situated in the wildest and most deserted parts of the country :—

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* Davy found "very beautiful specimens of this mineral in the alluvium derived from the decomposition of gneiss and granitic rock in Saffragam and the Seven Korles"—Page 20.

1. Werengodde.
2. Medellenewa.
3. Paremakande (Parama-kanda),* all three in the Demoole-pattu (Demaḷa pattu).
4. Giribawah (Giribáwa), in the Mahamedde-pattu (now Mí-oyen Egoḍa kóralé).
5. Maha-kelle.
6. Galgiriawah (Galgiriyáwa).†
7. Kadooroo-wuwa (Kaduruwewa), all three in Hatalispahay kóralé (now Hatalispahe kóralé east).
8. Kadigaway (Kadigawa), in Magoole kóralé (now Magul Męda-gandahé kóralé west).
9. Ressiroowey (Rasséruwa), in Naganpahay kóralé (now Hatalis-pahé kóralé east).

Judging from four nitre caves that I have visited and from the specimens of rocks of several more that I have examined, I believe that they are all very similar ; and that the rocks in which they occur in every case contain at least felspar and carbonate of lime ; from the decomposition of the former of which the alkaline base of the salt is generally derived, and by the peculiar influence of the latter on the oxygen and azote of the atmosphere the acid principle is generated. I have never been able to detect saltpetre, excepting superficially, where air could have access ; never unaccompanied by nitrate of lime or magnesia ; in no rock, not containing lime or felspar ; that the richness of the rock in general has been proportional to the abundance and intimate mixture of these two ingredients.‡

Of the Puttaḷam and Chilaw Districts, Brodie observes :—

Nitre used at one time to be procured from various caves. One of these I visited, and have reason to believe that the salt was not formed naturally, but it was obtained artificially from the dung of countless bats which have their abode in the grotto.§

The process of preparing the salt is thus detailed :—

When the salt occurred, impregnating the surface of the rock, the surface was chipped off with small strong axes, and the chippings by pounding were reduced to the state of a powder. This powder, or the loose fine earth, which in most of the caves contained the saline

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* Casie Chitty confirms the statement, and says that at the base of the hill Parama-kanda there is a cave from which the natives formerly obtained saltpetre.—"Ceylon Gazetteer," p. 183.

† In Nikawagampaha kóralé, Hiriyála hatpattu.

‡ "Ceylon," pp. 31–32.

§ Journal, C.B.R.A.S., No. 6, 1853.

impregnation, was well mixed with an equal quantity of wood ash.* The mixture was thrown on a filter formed of matting and washed with cold water. The washings of the earth were collected in an earthen vessel, and evaporated at a boiling temperature till concentrated to that degree that a drop let fall on a leaf became a soft solid. The concentrated solution was set aside, and when it had crystallized the whole was put on a filter of mat. The mother-lye that passed through, still rich in saltpetre, was added to a fresh weak solution, to be evaporated again ; and the crystals after having been examined and freed from any other crystals of a different form were either immediately dried, or, if not sufficiently pure, re-dissolved and crystallized afresh. The operations just described were generally carried on at the nitre caves. In the Province of Seven Kóralés, besides extracting the salt at the caves, the workmen brought a quantity of the earth to their houses, where, keeping it under a shed protected from the wind and rain, without any addition excepting a little wood-ash, they obtained from it, every third year, a fresh quantity of salt. After twenty-one years, or seven repetitions of the operation, the earth was considered unfit for further use, and was thrown away.†

Davy says that since the British occupation the manufacture was stopped, and thereafter, on account of political motives, prohibited.

Salt (chloride of sodium) is procured in large quantities in the Puttaḷam District by solar evaporation, and, indeed, forms the chief source of its revenue. The greater portion of it is obtained by means of artificial pans, and the manufacture is carried on exclusively in Puttaḷam proper, Nachchikali, and Karativu. It is spontaneously formed near Kalpiṭiya during the dry season, at Chilaw, and generally along the sea coast. Salt used to be manufactured—

in the vicinity of the Mundle lake, viz., Odepankarre, Pulichakolem, and Keriankally ; the attempt to prepare it near Chilaw has always failed. * * * The quantity produced is about 50,000 bushels.

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* Such a quantity must appear very large ; but I do not believe it is more than is required to decompose the whole of the nitrate of lime that accompanies the saltpetre. The proportion of alkali in the ash of large trees in Ceylon, which are usually burnt for the purpose in question, is very small : in one specimen that I examined I found only three and a half per cent. of carbonate of potash ; carbonate of lime was the principal ingredient.

† Davy's "Ceylon," pp. 265–267.

The average quantity sold to retailers annually is about 10,000 bushels, which yield a revenue of £1,333. 6*s.* 8*d.* The average cost of every bushel to Government is about 6½*d.*, whilst it is retailed at the uniform rate of 2*s.* 6*d.* per bushel. The entire operation is left to private enterprise, with only a Government supervision to prevent any contraband trade.*

The salt collected in the North-Western Province varies in colour from pure white to dull gray or reddish, according to the impurities contained in it ; it appears in the form of a confused crystalline mass, consisting of hollow quadrilateral pyramids with graduated surfaces (*pied de mouche*) and of cubes. The large grained salt is generally preferred, as it does not absorb moisture from the atmosphere so rapidly as that which is in smaller crystals. It is to be observed that the former is obtained in the first crop, the latter in those which succeed ; and no one can feel astonished that these latter should prove impure, when it is remembered that all except the first crops are procured from a mixture of sea water with the previously obtained residuary solution of various limes and magnesia salts. The natives have observed the difference in appearance of the various salts procured at the different crops, but do not seem to be aware that a most impure article is obtained by mixing all together.†

When the Dutch held sway in the Island the manufacture of salt was left in the hands of the natives, who were, however, bound to give a certain portion of the produce to the various officials under the name of *mésai uppu* or "table salt." The price at that time varied from three to four-eighths of a penny per bushel. Under the English rule the manufacture is a Government monopoly. Although it is left to private parties they are prohibited from selling or using it. Government use to buy the salt at the fixed rate of 2⅛*d.* per bushel from the purchaser and sell it at 2*s.* 8*d.* per bushel. The present rates are 19 cents per cwt., and the Crown in its turn disposes of it at the rate of Rs. 2·36 per cwt.

The *modus operandi* adopted in the manufacture is as simple as it is unique. Unlike the natural *lewayas* in the Hambantoṭa District, the salt pans have to be prepared artificially after the manner of paddy fields. The ground,

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* "Notes on the Topography of Chilaw," by T. F. Garvin, Colonial Medical Service, *Ceylon Miscellany*, March, 1854, p. 307.

† Journal, C.B.R.A.S., No. 3, 1847–48, p. 112.

which is below the level of the sea, is beaten down and levelled and partitioned off into numerous beds (*uppu-patti*) by means of low dams. A portion of the *kalap-puwa* or bay is "bunded" off into a reservoir (*kachchu-patti*), in which the water undergoes a preparatory process by evaporation. Brodie gives the average size of a reservoir as 40 or 50 ft. square, that of a bed 15 to 20 ft. in length by 8 to 12 ft. in breadth; but no particular attention is paid to this. Water from the reservoir is then introduced into the pan by means of a canal (*allei*), and by smaller canals (*pérallei*) into the various beds till crystallization occurs. Fresh quantities are from time to time let in as the crystallization goes on till the necessary depth of salt is formed.

The process commences in June and usually lasts till September. The salt is then collected and placed in heaps, and ultimately conveyed to the *kottus* or huts in which it is stored till handed over to, weighed, and received by the Government authorities into their stores. The construction of these stores has been the subject of much discussion and anxious thought and consideration. During the time of Brodie they were "in some instances formed of cadjans, sometimes of masonry, and sometimes altogether of timber, and of these latter some were placed over pits four or five feet in depth, while others were raised on dwarf pillars to prevent injuries from water. The cadjan stores require constant repair and are seldom quite water-tight; the mortar of the masonry ones soon becomes disintegrated by the action of the salt, the timber stores over pits were found inconvenient and damp, those on pillars unnecessarily expensive, it being observed that white ants do not attack timber saturated with salt; plain wooden structures placed on somewhat elevated sites appear therefore the most suitable, and will probably be universally adopted."*

* Journal, C.B.R.A.S., No. 3, 1847–48, p. 109.

The wastage caused by salt being stored in buildings such as these, none of which had the necessary qualification of being air-tight, was greatly diminished, if not altogether done away with, by the contrivance of a form of store suggested in 1886 by Dr. Modder of the Civil Medical Department, then stationed at Puttaḷam, namely, a vaulted store opening at one end only, and made as nearly air-tight as possible.*

The system in vogue is very crude and primitive, and is capable of much improvement. As pointed out by Brodie, *inter alia* :—

The beds are formed either in a black silt or mud, or else, as at Sinne Natchecally, in a nearly pure sand ; either of these substances is very easily disturbed and rendered uneven, which calls for renewed levelling and drying ; were artificial beds of some more solid impervious substance formed, there would be less leakage of water and less labour would be requisite ; even firmly beaten clay might prove useful, but has never been tried by the natives, and this owing to a belief that in such pans the water would evaporate very much more slowly ; to me this appears to prove that at present there is a very considerable waste by filtration into the soil. Again, owing to a feeling of petty parsimony, the salt when placed in heaps is in the majority of cases left quite unprotected, and thus becomes not only coated, but also mixed with sand and other impurities ; the kottoos are also by no means so impervious as would be desirable. * * * *

Lastly, it may be observed that the many valuable salts contained in the ley after the deposit has been formed are either quite lost, or are obtained intermingled with the wished-for product, which is consequently found to be exceedingly liable to deliquescence ; but probably the extraction of these would prove too complicated a process to be conducted by the natives.†

Considering the importance of the manufacture and the large returns it yields to Government, it is to be regretted that no person with a special scientific training should have yet been appointed to supervise the work and introduce improved methods such as are above indicated.

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* "Administration Report of the North-Western Province (Puttaḷam District)," p. 57 A.

† "On the Manufacture of Salt by Solar Evaporation, with special reference to the methods adopted in the Chilaw and Puttalam Districts of Ceylon," by A. O. Brodie. Journal, C.B.R.A.S., No. 3, 1847–48, p. 105.

Epsom Salt?—At Uppu-kuḷam, fifteen miles north-west of Puttaḷam, the natives affirm that a very bitter kind of salt (Epsom?) is to be procured, but the statement has not been verified.*

Medicinal Springs.—No medicinal or thermal springs are known in the Province. Davy writes :—

In the Seven Kóralés the water of Yapahove (Yápahuwa) is said to effect cures in certain diseases; but a specimen of this water, for which I was indebted to the Rev. G. Bissett, did not contain anything in its composition to confirm such a character.†

4. Mr. J. FERGUSON took the Chair.

5. Mr. FERGUSON remarked on the great industry and research which Mr. Modder's Paper showed, and on the interest with which all the many scattered essays, monographs, and compilations on the local Geology and Mineralogy are sure to be regarded by the officer who may take charge of the coming systematic Geological Survey of Ceylon. As regards plumbago mines, it is very interesting to know that the Siṃhalese, with their simple appliances, had sunk pits so deep as 1,500 ft. He, the speaker, had been down a Ballaarat gold mine thirty years ago, between 3,000 and 4,000 ft. deep; but these miners had the advantage of all engineering appliances. As regards *laterite*, it was a fact that some members of the Indian Geological Survey had recognized a laterite as old as the volcanic period, and as a formation distinct from gneiss, the most prevalent rock in India and Ceylon. Their Ceylon laterite, or cabook, however, is generally regarded as in a constant course of decay from the older rock; but curiously enough, a Colombo merchant (Mr. C. F. Alexander) twenty years ago read a Paper before the Geological Society of Edinburgh to demonstrate that Ceylon laterite was volcanic in its origin. Mr. Modder's account of the formation around Chilaw and Mádampé would partly account for the richness of the soil well-known as one of the finest cocoanut-growing districts in the Island. As regards the reference to gold and other valuable metals, the expectation shared by Sir Samuel Baker, among others, was that a proper examination of the rocks in our higher divisions would lead to the discovery of gold-yielding quartz, as well as possibly to the matrix of some of our precious gems. But since Sir Samuel's last visit to the Island, when he had had the honour of a long conversation with him on the subject, they had had the railway carried right across their mountain system through many deep cuttings, and a large number of rock tunnels, but

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* Journal, C.B.R.A.S., No. 6, 1853.

† Davy's "Ceylon," p. 48.

with no discovery of precious metals or stones. In conclusion he would remark on the statement by Mr. Modder that the Dutch left the manufacture and distribution of salt to the natives, who apparently sold it at a much lower price than at present prevailed. This would seem to upset the monopoly argument—that salt is more cheaply and regularly distributed to all parts of the Island than it could be if left to private enterprise.

6. Mr. Haly remarked with reference to the railway cuttings and the absence of gold, that Mr. Waring had told him that he had never before, in a wide experience of rock cutting, had to do with more ordinary road metal than in blasting through the many Úva railway tunnels ; but he (Mr. Haly) had seen around Badulla town quartz boulders marked after a fashion which reminded him very much of a specimen of rich Australian gold-bearing quartz, which he had seen in the British Museum. He thought the Badulla quartz well worth testing.

7. Mr. Ferguson remarked that though the Úva natives were well known to have smelted iron and to be keen about metals, yet he had no recollection of Siṃhalese names in Úva indicating gold, as they had on the Kandy side in Raṃgalla, Ramboḍa, Ruwanwẹlla, &c. Dr. Davy, too, had made his observations around Badulla and Namunukula-kanda : still it would certainly be well to follow up Mr. Haly's hint.

8. Mr. Haly read the following Paper :—

SOME ILLUSTRATIONS FROM THE FAUNA OF CEYLON OF WALLACE'S THEORY OF NATURAL SELECTION.

By A. HALY, Director of the Colombo Museum.

LORD SALISBURY, in his address to the British Association at Oxford in 1894, said :—

> In Natural Selection what is to supply the breeder's place? There would be nothing but mere chance to secure that the advantageously varied bridegroom at one end of the wood should meet the bride, who, by happy contingency, had been advantageously varied in the same direction at the same time at the other end of the wood. It would be a mere chance if they ever knew of each other's existence. A still more unlikely chance that they should resist on both sides all temptation to a less advantageous alliance. But, unless they did so, the new breed would never even begin, let alone the question of its perpetuation after it had begun.

Last September Professor E. B. Poulton pointed out in his address to the Zoological Section of the British Association at Liverpool that—

> the theory of Natural Selction, as held by Darwin and Wallace, was misconceived by Lord Salisbury, and that the minute differences which separate individuals are more important than Lord Salisbury's advantageously varied bridge and bridegroom.

I cannot imagine that Lord Salisbury can have ever seriously studied Wallace on Darwinism, in which the great Professor so nobly fights for the all-sufficiency of Natural Selection as the originator of species—a work bristling with instances of what I may call "Wallacian Woods." A wood filled with a species of little bird, the individuals of which vary so much on the north and south sides that a naturalist, knowing only individuals from the extreme north

and south confines, would describe them as separate species; whereas if he took a walk through the wood and collected individuals from all parts, he would find that there was every gradation between the extreme forms. Let us now suppose that some change comes over the environment, so that all the varieties in the centre of the wood become extinct, then the north and south varieties become species. I consider this ought to be called "Wallace's theory." He propounded it simultaneously with Darwin, who, as we all know, became dissatisfied with its sufficiency; and since his day all kinds of modifications of the theory have been proposed, Wallace alone standing firmly by the original idea.

When standing on a coral reef one is astonished at the extraordinary divergences under simultaneous conditions. On the sandy floors of the shallow sunlit pools we find sea-cucumbers, starfish, various kinds of molluscs, beautiful annelids, whilst darting through the water numerous brilliantly coloured fish of widely different families are seen swimming about. There is no apparent struggle for life: all seems peace and harmony, an abundant supply of well ærated water is furnished by the breakers outside, whilst the coral polyps themselves, and an abundance of minute life in the water and the sand, supplemented no doubt by the eggs or very young forms of the different inhabitants, furnish food for all; only the brilliantly coloured little crabs seek refuge in the interstices of the coral, or attach sponges or weeds to their shells until they become indistinguishable from their surroundings. It is curious that the best protected and best armed group should be the most retiring. This probably arises from the periodical casting of the shell, which leaves their soft bodies the favourite prey of their own species—at least this is known to be the case with the lobster. How could these great divergences ever have arisen? There seems no point of vantage from which Natural Selection could commence its operations.

But let us look more closely into the subject. The reef probably abounds with money cowries. I exhibit a tray of these shells, all collected on the same spot. Any one seeing the shells separately would consider the best defined forms true species, but I have seen many thousands of the animals alive, and there is not the slightest difference between their inhabitants; perhaps some anatomist might show a constant difference of arrangement in the teeth of those that live in the smooth barred shells and those of the depressed knobly ones, but even then I should be disposed to dispute their specific difference, for if the shells are capable of so much variation, why not the arrangements of the teeth on the lingual ribbon?

In a tray on the table are exhibited the two extreme forms known as *Cypræa annulus*, Linn., and *C. moneta*, Linn., and the connecting links. The depressed triangular forms have both bars and annuli, and seem to have a tendency to assume the smoother form of annulus, sometimes retaining the bar and sometimes retaining only the yellow ring. In some instances the bars are ill-defined and become mere black blotches. This is an example of a "Wallacian wood" on a most gigantic scale, as these shells are found throughout the Australian Pacific and Indian Pacific oceans, or, as it has been aptly termed, the Great Ocean.

Another identical example is found in *Oliva mora*. I exhibit a tray of examples taken on the beach of Weligam bay, and seven varieties are figured in the *Conchologia Indica*, the animals found in these varied shells being to all appearance identical. Their range is the same as that of *C. moneta* and *C. annulus*. I consider this tendency to extreme variation as much a specific character as any other, as different species seem to exhibit it in every kind of combination with other characters.

In the above-mentioned shells we find the same varieties mixed together over an enormous area, and under very different climatic conditions. What their bathymetrical

range may be I cannot discover, but I imagine them to be a purely littoral species, and they all crawl freely out of water. The temperature of the surface water over this vast area seems to vary from about 63° F. in its northern and southern limits to 86° off Ceylon.

In a common fresh water shell found over a great part of India and all the low-country of Ceylon we find the same mixture of varieties over a large area, and under very different climatic conditions, as in the marine species. So great are the varieties that it has been described as *Paludomus acutus*, *modecella*, *spiralis*, *spurcus*, *lotusus*, *parvus*, *palustris*, and *obesus*, which, according to Blandford, are all synonyms of *Paludomus tanjoriencis*, Gmelin. These different varieties can in some localities be collected within the space of a few yards.

The genus *Tanalia* is restricted to the hills of the Central Province, and to the forest-clothed country of the south and south-west—less than half the area of the entire Island. Its twenty-four species have been referred by Mr. Blandford to *Tanalia aculeata*, Gmelin, and he says that "in the Kẹlani-gaṇga between Kitulgala and Yatiyantota he has collected *T. tennentii*, *T. picta*, and *T. undulata*, with intermediate varieties. Here we have an example of the same mixture of varieties, only over an extremely limited area in closely allied conditions of climate."

This form of a "Wallacian wood" is extremely common in Ceylon. One of the most remarkable examples of it is *Plotheia decrescens*, Walker, a tray of which is exhibited. It is almost impossible to find two of these moths alike. This extraordinary variability is the more remarkable in this case as we have another peculiar species, *P. strigfera*, which also appears to be very variable. Other instances occur in the frogs and the reptiles, and I consider that even in our monkeys (*Semnopithecus cephalopterus*, Zimmer, and *Semno pithecus ursinus*, Kelaart) we have merely varieties with a strong tendency to produce a white variety, which is well

illustrated in our monkey-case upstairs. We have now seen two types of the "Wallacian wood": one in which extreme variability is found in every locality over a vast area, and a second in which it occurs in a very restricted area.

Another form of "Wallacian wood" is that in which we have great variety over a vast area, but the varieties do not intermingle, and each being confined within certain geographical limits is classified as a distinct species. Professor Wallace has illustrated this so beautifully in his *Island Life* and other works that I need not dwell further upon it.

Another form of "Wallacian wood" is that in which well-defined species in a very limited area are mingled with well-defined species covering large areas. A good example of this is seen in our pretty little Munias. We have a species peculiar to Ceylon, *Uroloncha Kelaarti.* We share another with Southern India, *U. striata.* From this *U. semistriata* of the Nicobars and *U. fumigata* of the Andamans both differ slightly, being thus reckoned as species peculiar to these islands. Our other two species, *U. malabarica* and *U. punctulata*, range over the whole continent of India, ascending the Himalayas up to about 5,000 ft.

Another form of distribution, the opposite extreme to that of the money cowry, is exemplified by our common sparrow, in which a form is constant over a very large area, or varies but very slightly. The Colombo sparrow undoubtedly varies slightly from the London sparrow, but not sufficiently, according to Messrs. Sharpe and Oates, to make them distinct species.

Finally, we have what may be termed "sports," variations of very rare occurrence, of which I exhibit two examples: one is a sport of the common *Batocera rubus* from the Morawak kóralé, presented by Mr. Deslandes. This has been described by Mr. Gahan of the British Museum as *B. polli.* Another example is from Rambukkana, a female *Gongylodes gongylodes*, presented by Mr. T. S. Dawson.

At first sight it looks like a different species, but close inspection shows that it is merely a common form emphasized.

In a Paper I had the honour to read before this Society on the varieties of *Testudo elegans*, I remarked that I could see nothing in these varieties for natural selection to select from : the different individuals crawl about on the open plains in the midday sun, and we cannot imagine that one form of colouration or sculpture can be of more advantage than another. Here I fell into an error of the same kind as Lord Salisbury's; if I read my Wallace right, these variations under the present conditions are of no advantage : it is only when the conditions change that natural selection comes into play.

Let us take the case of the money cowry. Supposing the conditions of the Red Sea and of the Japanese seas change, so that in the one only *C. moneta* survives and in the other only *C. annulus*; then we should certainly call them distinct species ; or, supposing that the conditions of the Great Ocean were so changed that none of the varieties except the banded ones could survive, then we should have a single constant species over the whole area.

If we imagine the conditions to keep constant, then this banded species will tend to vary again ; on the contrary, if the conditions continue to change in such a way that the species can slowly adapt itself to such changes, we have a case like that quoted by Romanes, in which transmutations of a water snail of the genus *Planorbis* can be traced through a long geological period in an ancient lake basin in Wurtemburg.

That such cases really occur in Nature there can be no reasonable doubt. Our species of Munias are an excellent example of such a case, and this could be multiplied by hundreds; and of course if we allow that species can arise from varieties in this way, there is not the slightest difficulty in granting that genera, families, orders, and classes may

have arisen in the same manner. In fact, these divisions are mere categories of human thought, and have no existence in nature.

The plæontologists are rapidly filling up the gaps between the higher groups, and for the evidence of the embryologists I must refer you to Romanes on "The Darwinian Theory."

I cannot, however, agree with the late Professor Romanes that we can rest content with this theory because it is demonstrated, although not proved as a scientific fact; nor that when the theory has been raised to such a level of probability it stands on the same basis as the fully ascertained facts of science. We cannot absolutely say from whence the varieties of our money cowries have come, or what their future history will be, but if you take up the "Nautical Almanac" you can see every eclipse of Jupiter's moons given to the fraction of a second, three years hence; and if an astronomer chose to take the necessary trouble he could give you a Jupiter moon-eclipse time table for any number of years past or any number of years to come. No such evidence as this, Professor Romanes said, can ever possibly be given for any form of the Darwinian theory; but I prefer the dictum of the great Physiologist Claude Bernard, "that we have no right to put any bounds to the possibilities of human discoveries."

It is for this reason that I have brought the foregoing examples of "Wallacian woods," as they occur in Ceylon, before the Society. I confess Wallace's theory seems to me perfectly satisfactory, and sufficient to account for the origin of the countless forms of animals and plants now inhabiting the earth. But if this theory is true, these useless variations must be accompanied by other changes—a principle known as the "correlation of growth"—before they can form true physiological species, that is to say, species incapable of interbreeding.

Now, in such a case as the money cowry it is surely in the power of anatomists to show whether the variations of the

shell are attended with variations in the other parts of the animal or not?

In the genus *Plotheia*, surely careful collecting and breeding of the larvæ would show whether the different species interbreed or not, and by collecting the Munias of the Andamans and Nicobars, and attempting to interbreed them together, or with our Ceylon species, similar facts might be ascertained.

When I first became acquainted with Darwin's "Origin of Species" I lived in a house surrounded with large grounds, with several hothouses, where the cultivation of domestic varieties of plants was an object lesson on Darwin's works, and no more thorough convert to Darwinism than myself ever existed; but when I came to study in the British Museum and saw species from all parts of the world, the theory seemed to me by no means satisfactory, and when in Ceylon I saw our extraordinarily varied *Phasmidæ*, all living side by side in the same woods under precisely similar conditions of life, I ceased to have any faith in Natural Selection as the true cause for the origin of species.

My error arose from the idea that variations must be useful, whereas we cannot attach any idea of utility to the variations which I have exhibited to-night. It is only when the slowly changing environment gives a better chance of survival to one or more of these varieties over the other that Natural Selection comes into play.

I do not know exactly what interpretation to place on Professor Wallace's dictum, that "only useful variations are preserved." If this applies to the whole animal, of course in the long run this must be the case: only the fittest survive —but if to particular structures, it seems to me to run counter to the theory.

In tracing the supposed line of descent, the preservation of useless or merely ornamental characters seems to me to afford a most important guide.

The hour-glass shaped mark on the backs of our frogs is an interesting instance. This cannot add to their power of concealment or benefit them in any way that we can see; as a fact, in *Rhacophorus maculatus*, Gray, it is of very rare occurrence, it is specific in *R. cruciger*, Blyth, and *R. eques*, Günther. In *R. micro tympanum*, Günther, we have a modified form of it, described in a very different way by Dr. Boulenger, but evidently merely a modification.

The common form from which these species have been derived no doubt possessed this character. The occurrence of peculiar markings in many species of those groups which we call genera is very common, and frequently enables us at once to refer the species before us to its proper place.

The interest of these local varieties consists in their study bringing us to the beginning of things. Good work is being done by many naturalists in careful observations and measurements, like the Papers, for instance, by Mr. H. Thompson on the common English shore crab, in the Proceedings of the Royal Society, October, 1896, and my principal object has been to show what advantages we possess in Ceylon for following the subject up.

Considering the millions of ancestors any living specimen must have had, the wonder is that species breed so true. Where the variation is very small—for I doubt if a case could be proved in the whole animal kingdom where there is none—it arises in a great degree from the perfection of adaptation to its environment obtained by the species. We have such instances in cockroaches, rats, sparrows, and other semi-parasites of man, who are able to follow him in almost any climate, and under almost all conditions which he is able to live in himself. We see the same thing in some birds of very wide geographical distribution.

The great opposition that Darwinism received at first was owing to the belief that his doctrine implied the descent of man from the monkey: the real reading of course being that man and the existing monkeys have branched off from

some common ancestor, we are not descendants of either the gorilla or the chimpanzee, nor can we look on any existing species as our ancestors.

In the same way the money cowry can never give rise to a fish, reptile, bird, or mammal. It has long passed the point from which the molluscous branch started, or that from which bivalves or univalves, cowries, and olives arose. But its varieties, supposing it has not attained the highest point possible of development along its own line, will, with changing environment, give rise to new species, new genera, new families, then to groups which if we were immortal we should recognize as mollusca, and after to groups of which we can form no conception. This of course is a mere hypothesis as regards *C. annulis*, but the Paleontologists are daily proving more and more clearly that it is no hypothesis for the animals of the past.

The race of man has existed for so short a time that he speaks of the hills as everlasting. Geologists tell a very different tale, beautifully condensed by Tennyson :—

> O earth, what changes hast thou seen !
>
> * * * *
>
> The hills are shadows, and they flow
> From form to form, and nothing stands ;
> They melt like mist, the solid lands,
> Like clouds they shape themselves and go.

9. Mr. Ferguson said the Paper just read was to him full of interest and instruction. Last September he was present in Professor Poulton's section of the British Association, when there was a battle-royal between Darwinians and anti-Darwinians ; but the latter—only one or two—got very much worsted. He remembered many years ago hearing a lecture from a young naturalist (now a well-known Professor), in which he went so far as to remark on the spots on the camelopard as the consequence of its habit of standing under trees in its African home, the shade gradually causing the spots, in contrast with the bright sunshine on the rest of the body ! He did not think the grave Professor of the present day would repeat such far-fetched suggestions of his youth. Meantime, he for one would be obliged if Mr. Haly—out of consideration to the rudimentary knowledge which most of them who had only dipped into the writings of Darwin, Wallace, and Romanes, possessed—could in a few words

define the different, and differing, views of the two former eminent men, and how far Professor Romanes had successfully criticized them.

10. Mr. HALY, in reply, gave a brief summary of Wallace's theory of "Natural Selection," which was adopted by Darwin at first as sufficient to account for the "Origin of Species," but afterwards modified by the addition of a special cause, "Sexual Selection." Wallace had never swerved from the view he originally adopted, which he (Mr. Haly) considered perfectly satisfactory and sufficient to account for nearly all their zoological riddles. Romanes, Weissman, and others had offered criticisms, new theories, &c., but none that had specially affected Wallace's position.

11. Mr. O. COLLETT then moved a vote of thanks to the writers of the Papers. This was seconded by Mr. P. RADLEY and carried.

12. Rev. F. H. DE WINTON moved a vote of thanks to the Chairman, remarking on the instructive character of the Papers read and the interesting remarks which had followed. Mr. ROLES, in seconding, extended the vote to include Mr. Haly, who had occupied the Chair during the reading of the first Paper. Carried.

COUNCIL MEETING.

Colombo Museum, October 21, 1897.

Present :

The Lord Bishop of Colombo, President, in the Chair.
The Hon. Mr. A. C. Lawrie, Vice-President.
Hon. Mr. P. Coomáraswamy. | Mr. C. M. Fernando.
Mr. G. A. Joseph, Honorary Secretary.

Business.

1. Read and confirmed Minutes of Meeting of Council held on July 27, 1897.

2. Resolved,—That the following Candidates for admission into the Society as Resident Members be recommended for election :—

Mr. J. E. Addyman : nominated by	Mr. A. Haly. Mr. G. A. Joseph.
Mr. J. W. Small, F.C.S. : nominated by	Mr. H. H. Cameron. Hon. Mr. P. Coomáraswamy.
Mr. N. Balasubramanyan, M.A. : nominated by	Mr. F. H. de Vos. Mr. F. W. M. Karunaratna.

3. Laid on the table a letter from Mr. Harward, tendering his resignation as Honorary Secretary of the Society.

Mr. Joseph stated that there was no necessity to elect any one to fill Mr. Harward's place during his temporary absence.

Resolved,—That Mr. Harward's name do remain on the list of Office-Bearers.

4. Laid on the table a Paper entitled "The Kitul Palm," by Mr. T. B. Pohath.

Resolved,—That it be referred to Messrs. C. M. Fernando and G. A. Joseph, for their opinions.

5. Laid on the table a letter from the American Museum of Natural History regarding an exchange of publications, which had been referred to the Director of the Museum.

Resolved,—That the Institution be informed that the Council regret they cannot see their way to arrange an exchange of publications; and that reference was made to the Colombo Museum, but that that Institution also is not disposed to exchange.

6. Laid on the table a letter from Mr. H. C. P. Bell, C.C.S., regarding his election as an Honorary Member.

Resolved,—To recommend that Mr. Bell be appointed an Honorary Member of the Society, in recognition of the valuable services rendered by him for a period of seventeen years; and that his name be brought before the next Annual General Meeting for election.

7. Resolved,—That a General Meeting be held in December, at which Mr. Bell's "Interim Report on the Operations of the Archæological Survey at Sígiriya, 1897," be read; and that His Excellency the Governor, Patron of the Society, be invited to preside on the occasion.

COUNCIL MEETING.

Colombo Museum, December 8, 1897.

Present:

The Lord Bishop of Colombo, President, in the Chair.
Mr. C. M. Fernando. | Mr. P. Freüdenberg.
Dr. W. G. Vandort.
Mr. G. A. Joseph, Honorary Secretary.

Business.

1. Read and confirmed Minutes of Meeting of Council held on October 21, 1897.

2. Laid on the table a Paper entitled "Aids to the Identification of Birds recorded from Ceylon," by Mr. A. Haly.

Resolved,—That it be referred to Mr. Staniforth Green and Bishop Copleston, for their opinions.

3. Laid on the table a Paper entitled "Don Jeronimo da Azevedo, Governor of Ceylon, 1594–1611 A.D.," by Mr. A. E. Buultjens.

Resolved,—That it be referred to Mr. P. Freüdenberg and Dr. W. G. Vandort, for their opinions.

4. Laid on the table Circular No. 119, containing a Paper by Mr. T. B. Pohath, entitled "The Kitul Palm": referred to Messrs. C. M. Fernando and G. A. Joseph, for their opinions.

Resolved,—That, in view of the opinions expressed by the gentlemen to whom the Paper was referred, Mr. Pohath be thanked for offering it, but be informed that the Paper is not considered suitable for the Journal of the Society.

5. Considered the question of holding the next General Meeting of the Society at the Colombo Public Hall. It was pointed out that the Reading Room at the Museum (usually allotted to the Society for its Meetings) would not permit of the due exhibition of the numerous paintings, plans, drawings, &c., illustrative of Mr. Bell's Paper.

Resolved,—That the Colombo Public Hall be engaged for the Meeting.

GENERAL MEETING.

Public Hall, Colombo, December 22, 1897.

Present :

Sir J. West Ridgeway, Governor, Patron, in the Chair.

The Lord Bishop of Colombo, President.

Mr. W. N. S. Aserappa.
Hon. Mr. A. Bailey.
Mr. F. W. Bois.
Mr. H. G. Bois.
Mr. E. Booth.
Mr. W. de Livera.
Dr. W. A. de Silva.
Dr. W. H. de Silva.
Rev. F. H. de Winton.
Mr. W. E. Davidson.
Mr. Chapman Dias.
Mr. J. Ferguson.
Mr. C. M. Fernando.
Dr. H. M. Fernando.
Mr. P. Freüdenberg.
Sir John J. Grinlinton.
Mr. J. A. Henderson.
Hon. Mr. L. F. Lee.
Dr. Muttukumaru.
Mr. S. C. Obeysekera.
Mr. J. G. L. Ohlmus.
Dr. L. Pinto.
Mr. Tudor Rajapaksa.
Mr. G. C. Trask.
Dr. J. L. Vanderstraaten.
Dr. W. G. Vandort.
Mr. H. Van Cuylenburg.
Mr. E. Wackrill.

Mr. F. C. Roles, Honorary Treasurer.
Mr. H. C. P. Bell and Mr. G. A. Joseph, Honorary Secretaries.
Visitors : seventy-five ladies and one hundred and twenty-five gentlemen.

Business.

1. BISHOP COPLESTON : With Your Excellency's leave, I would propose, as President of the Society, that we take the Minutes of last Meeting as read on this occasion, and proceed as soon as possible to the principal purpose of the Meeting.

The Minutes were accordingly taken as read.

2. H. E. THE GOVERNOR : I call upon Mr. Bell to read the Paper fixed for to-night.

3. MR. H. C. P. BELL, in rising, remarked that, as the majority of the audience had probably never visited Sígiriya, it might be well to preface his Paperby a brief Introduction descriptive of the ancient Rock Fortress.

INTERIM REPORT ON THE OPERATIONS OF THE ARCHÆOLOGICAL SURVEY AT SIGIRIYA, 1897.*

By H. C. P. Bell, C.C.S., Archæological Commissioner.

Introduction.†

Sígiri Rock is situated in the Central Province, some twelve miles north-east of Dambulla and a score or so almost due west of Polonnaruwa.

Sir Emerson Tennent says of it :—

> Sígiri is the only example in Ceylon of those solitary acclivities which form so remarkable a feature in the tableland of the Dekkan, starting abruptly from the plain with scarped and perpendicular sides, and converted by the Indians into strongholds, accessible only by precipitous pathways, or steps hewn in the solid rock. This gigantic cylindrical rock starts upward to a height prodigious in comparison with its section at any point. Its scarped walls are nearly perpendicular, and in some places they overhang their base. The formation of this singular cliff can only be ascribed to its upheaval by a subterranean force so circumscribed in action that its effects were confined within a very few yards, yet so irresistible as to have shot aloft this prodigious pencil of stone to the height of nearly 400 ft.

Above the plain in which it stands this huge oval mass of gneiss rock rises to a height of about 600 ft. For about half its height it is masked by terraces and *débris*, covered with forest and *mána* grass, and the upper portion is, without the help of ladders, entirely inaccessible from its overhanging its base nearly the whole way round.

Along the western and northern faces of *Sígiri-gala* ran a gallery—one of the most extraordinary engineering feats of the ancient world—at the level where the Rock has the smallest diameter ; so that while it stands upon that portion

* In illustration were exhibited plans, drawings, photographs, &c., as well as the whole set of *facsimile* copies in oils of the Frescoes.

† See the Papers on "*Sigiri*" in Journal. R. A. S., vols. VII. and VIII. (N. S), by Messrs. Rhys Davids and Blakesley.

which projects below, it is at the same time protected by the part which overhangs it. The outer side of this gallery was formed by a brick wall tapering to the top. Ledges sunk in the Rock received the wall, and at a certain height transverse blocks of a quartzose stone were laid across from the wall to the Rock so as to form a pavement. The wall had a coating of hard white plaster, much of which retains a high polish to the present time.

About a hundred yards of this gallery still stand almost perfect; but from the present iron ladders on the north side of the Rock to the point where the gallery once reached its summit on the north-east, the structure has completely vanished. Grooves and oblong "catches" cut in the Rock show where it was formerly sustained.

Until the fixing of the iron ladders and railing in 1895 the ascent to the summit of *Sígiri-gala* was attended with extreme risk; and had been accomplished by less than a dozen Europeans.

Some of the natural concavities of the Rock scarp have been further scooped—on its west cliff above the gallery—into caves or "pockets"; and in two or three of these remains of painting may yet be seen. The "pockets" are now inaccessible without elaborate preparations.

The south-west foot of the Rock is washed by a picturesque tank—at the present day of limited area, but anciently very extensive, with a substantial "bund" that joined the neighbouring rock, *Mápá-gala*, and extended southwards for several miles.

To east and west of the Rock are rectangular areas—terraces of earthwork held up by massive stone revetments—which, together with the Rock itself, cover nearly 300 acres and constitute the site of "*Sígiri-nuwara*." The outer line of defence was formed by an immense embankment surrounded for much of its circuit by a *diyágalak*, or moat.

Inside the western area of the ancient city are the remains of three or four lesser moated enclosures, and of

countless boulders, whose sides, where overhanging, formed rough cave shelters, whilst their tops were crowned with buildings, &c.

As a fortress "*Sígiri-nuwara*" must have been impregnable at the period: its defenders could have been forced into surrender only by starvation or treachery.

It was here, in the fifth century A.D., that for eighteen years Kásyapa I., the parricide, lived (as the *Mahávansa* quaintly puts it) "in fear of the world to come and of Moggallána," and ultimately met the just retribution of his crime.*

Sígiriya was subsequently handed over to the Buddhist priesthood as a monastic establishment. But for centuries the Rock has been entirely abandoned, though a small Buddhist temple is kept up at *Pidurágala*, a hill situated one mile to the north.

Preamble.

The third season's work of the Archæological Survey at Sígiriya commenced on February 6 last.

It had been found necessary, after two years' wear, to construct new leaf and thatch "lines" for the coolies. For this purpose an overseer with a limited gang preceded the main body by six weeks.

Besides clearing a fresh site on higher ground at a more convenient distance from the tank, and putting up four blocks of rooms, this advance force was engaged in rendering passable the road from Inamalawa (greatly damaged in places by the exceptionally heavy north-east monsoon of 1896),—in re-cutting approaches to the Rock, washed away nearly everywhere,—and in freeing the summit of the thick growth of *mána* grass,† tall weeds, and scrub that annually cover the surface with aggravating persistency.

Labour Force.

News of the ample and more salubrious housing provided this year soon augmented the respectable strength, 110

* *Mahávansa*, XXXIX. † *Andropogon Zeylanicus.*

hands, which began work in February, by a steady influx of recruits from Anurádhapura and other places. Above all, the higher rate of pay known to rule at Sígiriya acted as the chief incentive, whereby the Archæological Survey "mill" was kept constantly supplied with a never-failing stock of living "grist."

A score or more of Siṇhalese drawn from the surrounding villages—double the number that volunteered for work on the Rock in 1896—also sought employment, and proved willing and competent "basket-men."

As before, I supervised operations personally, from the start until we broke camp on May 25.

WEATHER.

Comparatively little rain fell at Sígiriya during the first six months of this year. The rain-gauge register (continued after my departure by the Head Draughtsman) gives a daily average of only ·12 in. for the six and a half months between February 1 and July 10. The highest record for twenty-four hours did not exceed 1·53; but that fell "plump" in an hour and a half.

At the beginning of May—later than usual—the wind veered round to the south-west,—the annual warning that the time remaining for unrestricted work on the top of *Sígiri-gala* is limited to a few days. The tearing strength of this "*yal-hulaṇga,*" when fully developed, as it sweeps across the lone, exposed Rock, can only be realized by actual experience.

HEALTH.

Thanks to the continuance—unlike previous seasons—of unusually fine weather, almost every week marked "a clean bill of health."

Two mild cases of measles caused me anxiety for a while. The patients were at once segregated, and luckily no fresh cases occurred. Had infection spread, that insensate panic which renders the ordinary Tamil cooly, or Siṇhalese *goiyá*, deaf to reason in the face of any epidemic would have led,

in all probability, to wholesale desertions, and perhaps necessitated the total abandonment of further operations for the year.

Fever, and simple abrasions incidental to earthwork—from neglect not infrequently degenerating into ugly sores—kept a small proportion of hands in the "lines" now and again; but only two men left, temporarily, to be cured at the Dambulla hospital.

The climate of Sígiriya has usually proved bracing to coolies, the majority of whom live for two-thirds of the year in the jungle-bound chenas and low-lying lands about Anurádhapura. Month by month they "put on flesh," despite the unspeakable heat which an eight-hours' spell of work upon the bare Rock involves; and return, after the four months' absence, robust and sleek, with a stock of health that enables them to battle the better against the insidious malaria of the North-Central Province.

Again, this year no accident of any sort happened—good fortune, for which I cannot be too thankful.

No amount of precautions avails against the mad recklessness of the Tamil cooly let loose on *Sígiri-gala*. He becomes for the nonce a veritable "indiarubber idiot on the spree," risking life airily a dozen times a day.

When it is remembered that in the past three seasons at least 20,000* persons have climbed to the top of Sígiri Rock, have spent hours at work on its limited surface and steep slopes, with a sheer fall all round of 300 to 400 ft., yet that every man, woman, and child has descended in safety,—no one will grudge me the satisfaction I feel at a record smirched by not a single casualty.

Summary of Work.

After a couple of years' experience it is fair to expect that operations, at a given site and by practically the same hands, should proceed smoothly and apace.

And so it has been at Sígiriya. The past season's work

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* Say, eighty coolies daily for three seasons of three months; or, 80 by 3 by 3 by 30 = 21,600.

has proved successful even beyond expectation. No hitch occurred : all went well from first to last ; and, as the result, the heavy task provisionally mapped out at the start was accomplished fully.

The work got through in the four months may be conveniently classed as in former Reports, under—

(1) Exploration and Survey of *Sígiri-nuwara.*
(2) Excavations.
(3) Miscellaneous.
(4) Copying the Frescoes.

Succinctly—the "*Mápá-gala*" Rocks to the south of *Sígiri-gala*, and the bunds to its east, have been freed of jungle and explored ; the survey of the wide area once occupied by the ancient city completed ; the western and north-western portions of the Rock's summit dug up (bringing to a close the excavation of the citadel) ; ascent to the top of *Sígiri-gala* made doubly safe ; and, above all (for the speedy reproduction of these unique paintings, yearly dwindling, had become of much moment), the whole of the sixteen frescoes remaining untouched in 1896 have been copied in oils by Mr. D. A. L. Perera, Head Draughtsman of the Archæological Survey.

(1) Exploration and Survey of Sígiri-nuwara.

As usual, it was not until the end of April that the Sinhalese villagers of the Inamalawa Kóralé cared to leave their paddy fields and seek work in clearing the forest undergrowth and low jungle, which covered parts of the ancient city not opened out in 1895 and 1896.*

This year the two low bunds which run eastwards from the Rock roughly parallel for more than a mile, were followed until lost in higher ground. Their object is open to doubt : perhaps they helped to retain in this direction the water of "*Mahá Sígiri-vẹwa*," the huge tank that served the city in former days. Its chief bund, uniting *Sígiri-gala* with

* On the "Rough Plan of *Sigiri-nuwara*" accompanying this Report the extent cleared in 1895 is coloured dark green,—in 1896, a lighter shade,—in 1897, pale green.

Rough Plan of SIGIRI NUWARA
FOREST
FOREST
FOREST
FOREST
FOREST
CHENA
PADDY FIELD
Path from Inamalawa
Path from Pidurugala
Preaching Rock
Prison Rock
Audience Hall Rock
Cistern Rock
SIGIRI-GALA
A.S. Camp
ROCK
CONTOUR OF PRESENT TANK
To Ilukwewa
SUPPOSED CONTOUR OF ANCIENT TANK
Present Village
A.S. Cooly Lines
MAPAGALA
Scale: 450 Feet to an Inch.
Areas excavated in 1895.
do. do. 1896.
do. do. 1897.
do. cleared in 1895.
do. do. 1896.
do. do. 1897.
Lith: M. R. Saldin & Co. Colombo.

BRITISH MUSEUM
NATURAL HISTORY.

Mápá-gala, trended thence in a south-westerly direction for a league or more. The "*vil bemma*," or outer rampart, of the city to the east of the Rock was also traced, cleared, and mapped,* as well as the lesser rocks, boulders, &c., on that side.

Further, the forest brushwood has been thinned out for a quarter of a mile or so west of the modern village of Sígiriya, immediately south of the paddy fields and minor road from Inamalawa. Within this area, besides a flattish outcrop of rock, lie the "*Mápá-gala*" rocks—twin hummocks joined on to the great Sígiri Rock by the short bund of the present insignificant tank, and split in two by a narrow gorge. The close connection of these subsidiary rocks with *Sígiri-gala* was (as anticipated in my last Report) at once apparent as soon as the underwood and grass had been cut and burnt.

Upon, and about, the two main rocks and the numerous boulders and levelled interspaces off their slopes, are traces of walls and cross-walls in stone, with here and there a brick-strewn site. A single cave on the east side is still utilized by the villagers for a humble *déwálé*.

Near *Mápá-gala* we fortunately lighted on an inscribed pillar, albeit in pieces, of interest historically; for it prolongs considerably the period up to which it is certain that Sígiriya continued the site of a monastic establishment.

Upon the death of Kásyapa I. and the fall of his citadel in the fifth century, his younger brother and conqueror, Moggallána, gave, according to the *Maháwaṇsa*—†

> The Daḷha and the Dáṭhá-Koṇḍañña Vihárés at the Síhagiri Rock to the Ságalika and Dhammaruchi brethren ; and having converted the fortress itself into a viháré he gave it to Mahánáma,‡ the elder of the Díghasanda Viháré.

Moggallána's son, "the famous Kumára Dhátuséna," says the same chronicle, "made improvements to the viháré that his father had built."§

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* At present under chena encroachment, which is engaging the attention of the Assistant Government Agent, Mátalé.

† *Maháwaṇsa*, XXXIX., 41, 42. § *Maháwaṇsa*, XLI., 1, 2.

‡ His great-uncle, the author of the first 36 chapters of the *Maháwaṇsa*.

Henceforth Sígiriya drops altogether out of the *Mahá-wḁnsa* record, save for a passing allusion to the murder there of King Saṅgha Tisa and his son about 608 A.D.

Too broken and weathered to permit of much of the contents being read, the stone has yielded the name of the royal grantor, "*Siri Sang Bo*," who, from the form of the Sinhalese characters, should be Sena II., so that the existence of a Buddhist temple at Sígiriya as late at least as the beginning of the tenth century is now assured.

(2) EXCAVATIONS.

In pursuance of the plan of work decided on last year (viz., to complete the digging of the Rock citadel before commencing to break ground at its base and elsewhere), the whole force was concentrated on the effort to finally round off, if possible, the excavation of the summit.

The accompanying "Plan of the summit of *Sígiri-gala*, 1895–1897," explains, by varied colouring, the direction and extent of our annual advance in digging. As pointed out in my first Report—

> The general fall of the ground is from west to east and, less abruptly, from north to south,—doubtless following the slope of the living rock below. This natural declivity was evidently turned to account in the adaptation of the ground for the terraces and buildings which once occupied it. The terraces along the high ground bordering the west edge and stretching inwards to about the axis of the hill fall away very gradually from north to south, as do those from the central *pokuṇa*, or pond, to the south and east verge of the Rock. The steepest bank runs longitudinally south from the north end of the Rock, marking the high ground off from the low-level area. The only high bank lying east and west adjoins the Rock's north-east edge.*

We started in 1895 at the north-east corner, and keeping to the foot of the high ground on the west, worked our way slowly—and, from total ignorance of what to expect, somewhat clumsily—down to the brink of the *pokuṇa*.

Last year (1896), strengthened in numbers as well as by the valuable experience gained, far more digging was done, and that cleaner withal.

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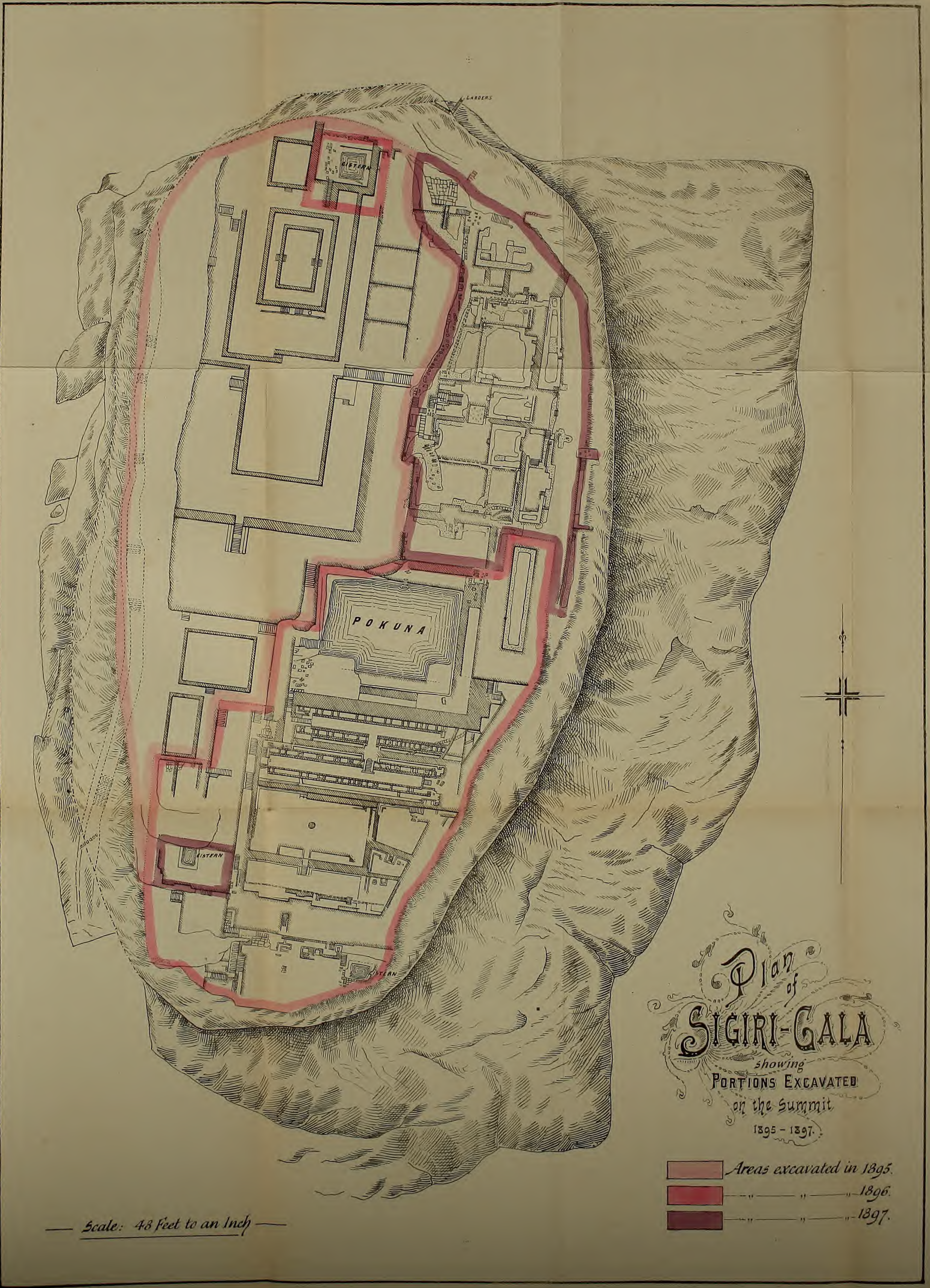
* C. A. S. Journal, vol. XIV., No. 46, 1895, p. 49.


LADDERS
CISTERN
POKUNA
CISTERN
CISTERN
Plan of Sigiri-Gala showing Portions Excavated on the Summit 1895 - 1897.
Areas excavated in 1895.
" " 1896.
" " 1897.
Scale: 48 Feet to an Inch

BRITISH MUSEUM
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Leaving the cleaning out of the *pokuṇa*, as most sheltered from the wind, for the last week of the season's work, we pushed past it, skirting the Rock's east edge, and so on southwards, until the entire low-level area lying between the pond and the southernmost verge of the Rock, besides a small slice of the higher section, was completely excavated.*

This season, as a glance at the "Plan" will show, we had—to drop for a moment into colloquialism—"our work fully cut out," if "the high-level area, which, broadly speaking, occupies the western half of the summit," was to be laid bare before the south-west gale fell on us.

It is the more pleasing, therefore, to be able to record that (with the exception of a terrace some 70 ft. or so down the west scarp) the task has been thoroughly mastered.

As far as concerns the citadel that once crowned Sígiri Rock—*finis coronat opus.* It is open to any one now to ascend the Rock with ease and safety, and to follow out on its summit (slopes excluded) the complete plan of a marvellous structure 1,400 years old, yet in outline virtually as perfect as when first laid out.

I said in 1896 that we hoped "to uncover next year (*i.e.*, 1897) on the higher level the chief rooms, for they would naturally be built in the most commanding position." Nor have we been disappointed.

Starting at half a dozen points, where a step or two barely showing above the *débris* indicated the probable ascent from the lower to the higher area, and trenching onwards up successive flights of stairs—a score in all, more or less—and along retaining walls, the several parties, working simultaneously from north, south, and east, joined hands ultimately in the large upper apartments situated towards the north-west corner of the Rock.

The rooms, courtyards, &c., stretch the whole length of the ridge, in gently ascending tiers, from the small chamber directly above the Rock cistern at the south to the penultimate, and uppermost, room near the north end.

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* C. A. S. Journal, vol. XIV., No. 47, 1896, p. 249.

All are oblong, and all—or nearly all—the chambers had corridors completely round them. Many passages, &c., were paved throughout with quartz slabs; though much of this choice pavement has been displaced by the wash of centuries, or from being deliberately put to other use by Buddhist monks, when the fortune of war found them located in the "marble halls" of royalty. To this latter accident is also probably due the sorry internal alterations which some of the rooms seem to have undergone,—division and subdivision,—until the original configuration is past tracing with certainty.

So, too, as regards surface decoration—stucco mouldings, ornament, and the like, that Kásyapa's royal stronghold would hardly lack—a few stray fragments, turned up by the spade, are the sole traces left to us by the "sons of Buddha," inured to simplest surroundings and averse to permit worldly attractions to break in upon the austerity of daily life.

On clearing the tangled *mána* grass and low jungle off the west edge of the Rock a surprise awaited us. It became for the first time evident that the whole side of the slope—here more prolonged than on the other faces—had been grooved deeply to hold the foundations of a lower reach of rooms and passages, and drain the summit speedily of the heaviest rainfall.

The boldness of conception and pre-eminent skill which enabled these old architects to make even the steepest slopes of *Sígiri-gala* subservient to their will, led them to annex profitably every inch of possible foothold. The exterior wall of the citadel, which wholly engirdled the Rock (except on the south-west), was built everywhere several feet—indeed for a great part of the circuit some yards—below the flat summit, and must have risen majestically all round from the very brink of the precipice.

Nay more: at one point it positively descended the sheer side of the Rock to a lower reach.

Two-thirds of the height up the west cliff, towards its northern end, is a ledge of the main Rock nearly 50 yards

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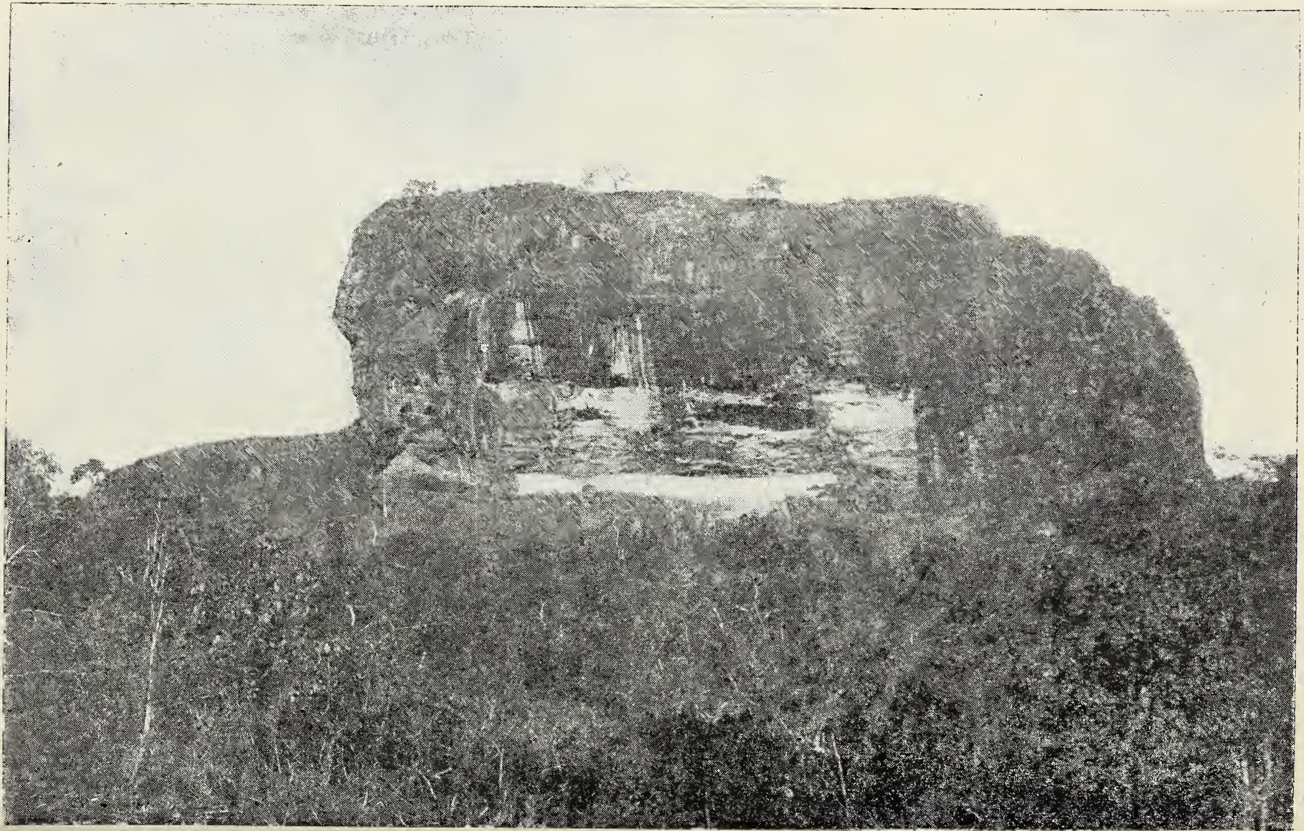

Skeen & Co. Photo-zinco. **SIGIRI-GALA** (*West View*). *Arch. Survey photo.*

in length by 10 broad,—from below it looks a mere streak marked by a little vegetation,—which terminates in two cramped caves, or rock "pockets."*

The obvious suitability of these, and the similar, but higher placed, pair of caves at the southern extremity of the Rock, for "watches" over the country from south to north-west, cannot fail to strike any one studying the capabilities of *Sígiri-gala* as a rock fortress. To that purpose these primitive "belvederes"—if I may so term them—must have been applied when the citadel was threatened: whilst in times of peace they would signal messages broadcast to the city spread out below.

At present, the only means of reaching this barely accessible break in the western cliff is by a rope let down the long slope from the summit as far as the vertical rock wall, with a straight drop thence of 15 ft. on to the ledge.

Too late in the season we succeeded in getting a jungle-stick ladder into position at the bottom of the slope, and commenced to excavate the *débris* covering stairs that lead down to the small look-out caves. But the south-west gale caught us with the work half finished, and its completion has to stand over for next year.

Time enough to guide the inquirer step by step on paper through the length and breadth of this wondrous structure when a full Report, illustrated by detailed plans of corridors, stairs, rooms, &c., numbered *seriatim*, can make such circumambulation intelligible. For the present a flying sketch (so to speak) of the citadel, as it stands exhumed, may suffice to give *a general idea of its complex, yet harmonious, ground plan.*

Climbing the iron ladders at the point where the gallery once zigzagged up the north face of the Rock—first west, then east—the rock-cut grooves (from which all vestiges of masonry have long since disappeared) run up to the summit at an easy gradient.

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* See Plate, "*Sigiri-gala* (West face)."

Mount the topmost flight of steps of the erstwhile "gallery" still in position; and note the view.

Directly in front, looking south from the vantage ground of the east to west cross bank, stretched below as far as the central *pokuṇa*, is so much of the lower area as lies between the Rock's north and east edges and the high ridge that occupies the western half of the summit. Most here is comparatively level—the only level portion of any extent in a citadel where terraced arrangement was inevitable from the irregular conformation of the Rock's surface. This area was seemingly allotted to courtyards, passages, and side rooms. Half-way a winding staircase of three or four flights of steps—the longest on the Rock, and pierced at its head through tall flanking walls—shows the means of direct communication with the upper area to the west. At the side of these stairs is the magnificently carved "*gal-ásanaya*," or granite throne, discovered in 1895.

On the left, skirting the east edge of the Rock, was a range of minor rooms and passages, doubtless communicating with an outermost corridor, which almost encircled the citadel. This series of side chambers was continued on to near the south end of the Rock, interrupted only at the pond, where extra rooms, &c., intervene.

As I had occasion to note in last year's Report:—

> That part of the ancient citadel lying south of the pond, and east of the high-level strip, was laid out in a series of cross-terraces, east and west, varying in width—and falling away southwards. From the *pokuṇa* to the foot of the last staircase at the extreme south are seven or eight distinct terraces......... The centre is taken up with an open courtyard and passages leading to the pond, and round it, on either side, by stairs and intermediate landings—all admirably planned to suit the physical conditions, and displaying great ingenuity in turning to full account the limited space and surface inequalities of the Rock's summit.*

More than one of these terraces has been curtailed and hideously disfigured by *single-brick walls* of later construction—"patched up into a smoothness and smugness"

* C. A. S. Journal, vol. XIV., No. 47, 1896, p. 251.

Ruskin forcibly pronounces "more tragic than uttermost ruin."

The lowest staircase—at the south-west corner of the Rock—descends with a right angle return to the "watch-cave" in the perpendicular crag on this side. The southernmost terrace, to the east of these stairs, was clearly dedicated to Cloacina.

Of the higher level half of the summit I have already spoken, as containing a succession of apartments, rising in tiers northwards.

The backbone, as it were, of the citadel is found in the paved way, with steps descending ever and anon, that was carried along its axis from end to end, hugging the retaining wall of the upper ridge, and winding with its angles, but for the most part running straight as an arrow. From this "spinal column" branch off, east and west, staircase "ribs," which would render communication between all parts of the citadel easy and rapid; whilst each section was equally well served, by the cunningly designed interconnection of its own component divisions, through a maze of minor passages and stairs.

No less perfectly planned was the *water supply.* The rock-hewn *pokuṇa*, nearly 30 yards square, centrally situated and accessible from every side, would suffice, when replenished yearly by the north-east monsoon rains, for ordinary requirements during the ensuing dry months. For drinking water resort was had, in all probability, to two at least of the three smaller cisterns close to the Rock's north, south-west, and south-east edges.

A word or two regarding the *architectural construction* of the citadel.

Further lengthening of the deep longitudinal trench, begun last year from the extreme southern verge, confirms the impression that the foundations were throughout the low-level area, in general, of that form of stonework known as "irregular horizontal," and run down to the rock core. Upon this rested brick walls, vertical or in batter, plain or moulded, according to position and purpose, but all alike coated thickly

with a tough plaster, white and polished, that has resisted the damp in places to this day. The massiveness of many of these walls bespeaks considerable height originally, despite the fact that the brickwork was almost dry-laid and indifferently bonded crosswise. But in "make" these ancient bricks—some a cubit in length—shame most of our modern outturn, being as well burnt as they are sharp and close.

Of the system of *roofing* we know nothing beyond the certainty that it was timbered throughout and flat-tiled, in the style familiar among the Anurádhapura ruins.

A marked feature of the ground plan is the *erratic location of steps.* As often as not, they are pushed aside from the centre of the rooms into which they lead, and relegated to all sorts of odd corners. This vagary was no doubt forced upon the architects by the unconformable surface of the rock, which had to be reckoned with everywhere.

But noteworthy, above all, is the *complete absence of monolith pillars and stone-carved doorways,* the most salient characteristic of ancient structures in the Island. Whilst quartzous steps and flagstones were lavishly employed to enhance the beauty of this peerless citadel, not one fragment of column, door-frame, or window-sash in *stone* has come to light on *Sígiri-gala.* Above the floor all was of brick or wood. As for gneiss, with the sole exception of the noble throne above mentioned—like silver in the days of Solomon—"it was nothing accounted of," and finds no place in Kásyapa's citadel.

Little wonder that the glory of a structure, towering to heaven on the dizzy heights of *Sígiri-gala,* "white as snow" within and without, should call forth irresistably the unalloyed admiration of the old chronicler, not given to spare its master-hand, King Kásyapa, "that wicked ruler of men." "He built there," so it is written, "a lovely palace splendid to behold, like unto a second Álakamandá, and lived there like (its lord) Kuvéra."*

* *Maháwaṇsa,* XXXIX., p. 5.

How little comparatively now remains to attest the ancient beauty and grandeur of *Sígiri-nuwara*, the parricide's stronghold :—

> Those golden pallaces, those gorgeous halles,
> With fourniture superfluouslie faire ;
> Those statelie courts, those sky-encountring walls,
> Evanish all like vapours in the aire.

Miscellaneous.

Of extra work carried out this year—apart from the copying of the frescoes, which will be presently dealt with—the most important was the improvement, obviously called for, in the means of ascent to the Rock's summit.

The two stout iron ladders put up by the Public Works Department in 1894–95, which land the climber at the bottom of the grooved slope (the track of the "gallery" long since washed away), need only light hand-rails and flat iron below the rungs to further simplify ascent. Not so the low single rail carried up the slope to the top of the Rock from the head of the ladders. This makeshift hand-hold was distinctly unsafe—as easy to slip under as trip over—and each season I have had to take the precaution of supplementing it with a close-tied fence of jungle sticks. I, therefore, took upon myself this year the responsibility of making, once for all, a "Union Jack" fence in iron. Additional standards have been sunk into the rock, a higher rail run through them, and diagonal bars fixed across each span.

"Síha-giri Rock, that was hard for men to climb,"—as the *Mahávaṉsa* puts it,—may for the future be ascended in perfect safety by the most timid.

Mr. Perera being fully occupied in painting the frescoes until early in July, the drawing in detail of walls, stairs, &c., excavated since 1896 will be resumed and completed next season.

A hundred *photographs* and upwards were added to the lengthy series of views of Sígiriya commenced in 1895. It is intended to make this series exhaustive, in order that

it may still be possible to study the architecture of every portion of the citadel, even when, as is inevitable, much now standing shall have yielded to the "tooth of time and razure of oblivion."

As in past seasons, few "finds" of special interest were dug up. From the quantity of heavy iron nails, bolts, clamps, &c., brought to light, it is clear that the doors were massy, and strongly bound.

A handsome Greek-pattern vase, or cruse, blue-enamelled, is the chief piece of ancient pottery yet yielded by the excavations.*

Copying the Frescoes.

The whole set of the unique frescoes of Sígiriya has at length been faithfully reproduced on canvas, and in a manner worthy of the original paintings.

The Government and the public owe this happy result to the singular talent, unflagging patience, and real courage of one man—Mr. D. A. L. Perera, ex-student of St. Benedict's Institute, and now Head Draughtsman of the Archæological Survey. Altogether, from first to last, in 1896 and this year, Mr. Perera spent nineteen weary weeks—practically five months—in the cheerless "pocket" caves of *Sígiri-gala* working on day after day from morning to evening—exposed latterly to the driving force of the south-west wind, and sorely tried at times by inflammation of the eyes and attacks of fever—before the final touch could be put to the last of the twenty-two paintings.

To glance back for a moment at the gradual steps leading up to this full fruition of hopes, which in 1895 seemed faint indeed.

The frescoes, in their inaccessible isolation high above the "gallery" that clings to the Rock, well sheltered by the beetling crag, have naturally attracted the notice of every visitor to Sígiriya. Tennent, Rhys Davids, Blakesley, each in turn specially alludes to them.

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* Exhibited at the Meeting.—*Hon. Sec.*

But it was left for Sir A. H. Gordon, when Governor of Ceylon, to initiate *practical* action for the securing of copies of the paintings.

At the desire of His Excellency the Governor, Mr. A. Murray (aided by Mr. F. G. Pigott, both of the Public Works Department) undertook in 1889 the uninviting task of reaching the frescoes; and, surmounting all difficulties, climbed into the larger, or more southerly ('B'), of the two rock "pockets" in which the only well-preserved paintings still exist.

In a short paper communicated to "*Black and White*" in 1891,* Mr. Murray thus describes the method then adopted for the ascent:—

> Holes were jumped into the rock face, one above the other, as the timber staging was carried up, and iron jumpers driven home and secured with cement. To these the staging was lashed and rendered secure. Once the chamber was reached a hemp rope ladder with wooden rungs was made fast to stout iron stanchions sunk into the floor of the chamber itself and made as rigid as possible by attachment to the staging. The erection of the staging was by no means an easy matter .... It was found that the floor of the "pocket" was at too steep an angle to admit of any one sitting, much less standing. Iron stanchions were therefore let into the floor, and a strong trestle, or framework, made secure to them. On this was placed a platform, from which the work of copying the frescoes was carried out. The frescoes being painted on the roof and upper sections of the sides of the chamber, the staging, as erected, made it only possible to copy them by lying at full length on back or side.†

Even so—cramped in position, hampered by the harsh June gale, and limited in time to a week—Mr. Murray brought away copies, done in *coloured chalks*, of thirteen (all he could reach) of the seventeen frescoes in "pocket" 'B.' I may be permitted to repeat here what I said last year:—

> As an heroic first attempt to reproduce the frescoes, carried out under *conditions which rendered full success hopelessly impossible*,

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* No. 1891: reprinted in the *Ceylon Literary Register*, 1891, vol. II., p. 85.

† A large sectional drawing hung in the Public Hall showed (to left) the method of ascent employed by Mr. Murray in 1889, and (to right) that adopted by the Archæological Survey in 1896–97.—*Hon. Sec.*

Mr. Murray's efforts are beyond praise......... That under circumstances more favourable *the Archæological Survey has been enabled to obtain, for the first time, actual facsimiles of the Sigiriya frescoes—just as they remain after the wear and tear of nearly fifteen centuries*—need in no degree detract from the individual merit of Mr. Murray's pioneer work.*

"'Tis not in mortals," as we know, "to command success." Mr. Murray has done more: he has deserved it. His rapidly executed, but none the less beautiful, crayon drawings adorn the Museum walls: to drag them into comparison with the *finished copies in oils* of a trained draughtsman would be as unbecoming as unjust.

In 1895—our first season—"Mr. Perera was prepared with all requisite materials for copying the fresco portraits." But it was not until the following year, after protracted correspondence, that the Public Works Department solved the difficulty of devising some inexpensive plan for making *both* the "pockets" ('A,' 'B') accessible.

Several alternative proposals culminated in a suggestion of the Provincial Engineer, Central Province, which was adopted. Mr. R. D. Ormsby designed—

A vertical wire ladder, cane-hooped, and securely fastened to iron jumpers above and stout rings below—a mode of ascent theoretically simple, but requiring a firm hold and a sure head.†

This ladder the Public Works Department could not get into position for some time after we commenced work last year. In consequence, only six *facsimile* copies of the complete series were finished in 1896.

The delay was, however, turned to account profitably in a collateral direction—the securing of a comprehensive painting of the two "pockets" 'A,' 'B,' and their *frescoes as a whole*.‡

I quote from last year's Report:—

The height of the "pockets" from the ground and the gallery prevents a complete view of all the frescoes together being got from

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* C. A. S. Journal, vol. XIV., No. 47, 1896, pp. 256–57. † *Id.*, p. 254.

‡ Besides the copying of the "*viyan redda*" painting, discovered in a cave under a boulder west of the Rock.

BRITISH MUSEUM
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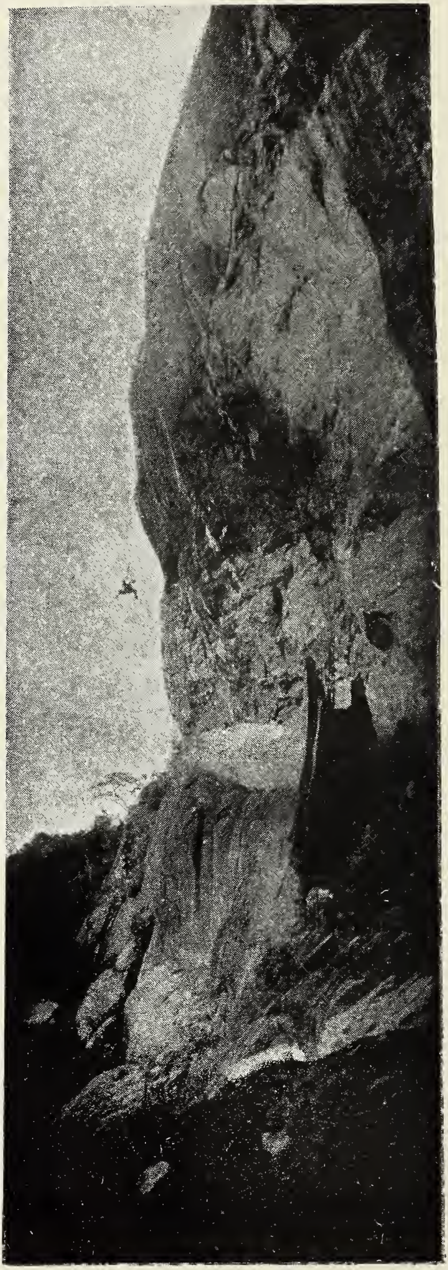
SIGIRI-GALA.



Photographing the Frescoes from mid-air.

any one point, except at such a distance that even a tele-photographic lens failed to bring them reasonably close. We therefore decided to photograph and paint the two caves from mid-air.

A 4-in. hawser was lowered to the ground from the summit over the west cliff (which here projects considerably), and a strong iron block bound to the end. Through this block a 2-in. rope was passed, and an improvised chair firmly tied on to it: the hawser was then pulled half way up the Rock scarp. Hauled up thus, one swung in the air upwards of 150 ft. above the ground, and 50 ft. clear of the cliff.*

Instantaneous photographs were tried, but with little success, owing to the strong wind and an indifferent drop-shutter.

On the other hand, after a week's "rocking" in space, Mr. Perera completed an excellent little oil painting, to scale (about $\frac{1}{32}$nd). This shows at a glance the relative position of the several figures.†

This season the same wire ladder was erected in good time. Mr. Perera set to work in February, and plodded on steadily until, first, the remaining eleven frescoes of "pocket" 'B,' and finally, the five in 'A' had been copied in every particular.

As to the wonderful fidelity with which Mr. Perera has carried through a laborious undertaking, encompassed by great difficulties, I can but reiterate the high opinion I put on record last year :—

It is hardly going too far to assert that the copies represent the original frescoes, as they may still be seen at Sígiriya, with a faithfulness almost perfect. Not a line, not a flaw or abrasion, not a shade of colour, but has been reproduced with the minutest accuracy.‡

The wire ladder, as fixed, falls almost perpendicularly to the floor of the "gallery," within one foot of its wall, from the shoulder of the overhanging rock, 40 ft. up. From that point the rock bends inwards for 4 ft. or so to the sloping floor of the larger "pocket" 'B.' This cave is fairly roomy —38 ft. 4 in. by 11 ft. 8 in.—and more than high enough to

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* See Plate. The deep shadows were cast by the setting sun. [An enlarged drawing was on exhibition at the Meeting.—*Hon. Sec.*]

† Exhibited at the Meeting. The accompanying Plate has been lithographed from a photograph of Mr. Perera's painting.

‡ I may add that Mr. Perera's work has been examined on the spot and received unstinted praise from a succession of visitors, official and private, who have had the opportunity of comparing the copies with the original paintings on the spot.

stand in upright, except at the left, or north, end. Here the floor rises steeply on to a narrow slanting ledge, only 3 ft. 6 in. in height and but a cubit in width—the sole possible means of approach to the second, and much smaller, "pocket" 'A,' which is barely 3 ft. wide.

It was not practicable for Mr. Murray in 1889 to reach this northern cave from his trestle staging.

Last year, at the outset, I had iron standards (3 ft. 4 in. in height), with a single top rail, driven into the rock above the ladder along the edge of both "pockets" and the connecting ledge, as an essential safeguard. Without such hand-rail a slip on the smooth shelving floor would mean instant death on the rocks fifty yards below.*

Thirteen of the frescoes in "pocket" 'B' can be easily touched from the floor, being painted on the rock wall and lower part of the oblique roof at the back of the cave—the throat, so to speak, of gaping rock jaws—but they are not on one level. No. 14 is on the wall at the south, or right "horn" of the half-moon chamber; Nos. 15, 16, and 17 (the solitary hand) well up the concave roof—and all four beyond the floor line.

To get at these paintings it was necessary to construct a "cantilever" of jungle timber, firmly lashed to a stout iron cramp let into the rock floor. To the extremity of this projection was tied a rough "cage" of sticks; and from this uncomfortable and perilous perch Mr. Perera made his copies of the last and loftiest frescoes in "pocket" 'B.'†

Even more difficulty and danger attended the fixing of a hurdle-platform outside the extremely narrow and slippery ledge separating "pocket" 'B' from 'A' and onwards to the termination of 'A.' It took fully ten days to complete this *mẹssa*, or stick-shelf—only a few hands being induced by special remuneration to risk their lives on the job. In addition to 1-in. iron bars supporting the woodwork (the whole braced strongly to thick iron cramped into the rock),

* Photographs C. 633, 634. † Photograph C. 785.

the hurdle had to be further held up by a central hawser and side ropes, hauled taut round trees on the summit of the Rock nearly 300 ft. up. When finished, this improvised platform stood out from the cliff 15 ft. horizontally.*

Other "pockets" there are "scooped within the living stone," further north along the western face of the Rock and higher up still. The larger of these were also plaster-coated and painted; but the colouring has disappeared almost entirely, and it is doubtful whether the caves themselves can now be reached in any way.†

It is reasonable to conclude, from their being found in so inaccessible a spot, that the frescoes are merely the last remnants of a large number of similar paintings which covered the bare and perpendicular rock immediately above the terrace [gallery]. It is unlikely that the *only* frescoes should have been painted where they can be so hardly and so little seen; but they are found in almost the only part of the precipice protected partially from sun and rain, so that the destruction of any others that may have existed was inevitable."‡

To pass to the *frescoes* themselves.

In an "Interim Report" such as this, it is not possible to do full justice to these unique paintings. They demand special treatment in detail, and that I hope to give later.

Here I must limit myself to *a rapid general description*, drawing attention merely to certain broad features which un through the frescoes as a group.

It is usual—and convenient—to style the Sígiriya paintings "frescoes." But in reality—like their coeval and even more remarkable congeners at Ajaṇta—they have no claim to be thus honoured. Says Mr. Griffiths, when reporting to the Indian Government on the Ajaṇta paintings :—

They are not "frescoes" in the true acceptation of the term; nor do they appear to correspond to the Italian *fresco secco* (where the entire surface of the wall was first prepared for painting on and then thoroughly saturated with lime water before the painting was commenced), as the groundwork upon which the paintings were executed would hardly admit of this treatment.§

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* Photographs C. 778–82. † See Plate (*ante*), "*Sigiri-gala*, West face."

‡ Rhys Davids, in Journal, R. A. S., vol. VII., Part. X., 1875, p. 193.

§ *Ind. Ant.*, vol II., 1873, p. 153.

Like the so-called "frescoes" at Ajaṇṭa, those of Sígiriya are strictly *paintings in tempera*, that is, the pigments used were mixed with some liquid vehicle and laid on a dry surface.

The groundwork at Ajaṇṭa—

Appears to be composed of cowdung, with an immixture of pulverized trap, laid on the roughish surface of the rock to a thickness varying from quarter to half inch. Over this ground was laid (the *intonaco* of) thin, smooth plaster, about the thickness of an egg-shell, upon which the painting was done.*

At Sígiriya—and to support my examination I called in the aid of the most skilled Siṇhalese "*sitiyaru*" (painters) from Nilagama, in the Mátalé District, the village upon which has devolved for centuries the hereditary "service" of renewing the paintings of the ancient cave vihárés of Dambulla—an analysis of the plaster showed a groundwork of tempered earth and kaolin of a reddish brown hue and $\frac{1}{2}$ in. in thickness, coated with at least two layers of white chunam, $\frac{1}{4}$ to $\frac{1}{2}$ in. thick. The clay base, strengthened by the admixture of "*dahiyáva*," or paddy husk, and perhaps shreds of cocoanut fibre, was first put on by hand, the chunam coating being (as at the present day) smoothed over it with a trowel.

Only three pigments were used, *yellow*, *red*, and *green*,† though *black* seems to have been given a trial as background to one figure, No. 14 'B.' The particular shades of these colours predominating the paintings may best be realized from the modern corresponding media employed by Mr. Perera in copying them, viz., chrome yellow, yellow ochre, raw sienna, burnt sienna, raw umber, light red, Indian red, sap green, terra vert, lamp black, and flake white.

The entire omission of *blue* is very remarkable, and difficult to account for, as this colour enters freely into the sister paintings at Ajaṇṭa.

No one who chooses to carefully compare the Sígiriya

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* *Ind. Ant.*, vol. II., 1873, p. 153.

† "I tried in vain to detect green on the Sígiri frescoes" (Rhys Davids *loc. cit.*, p. 210).

paintings with those found in the Ajanṭa caves will fail to be convinced that *artists trained in the same school, if not the very same hands, must have executed both Indian and Ceylon frescoes.* The evidence to be drawn from dress and ornament, no less than from the quaint "tricks" of pose and colouring common to both alike, for differentiating race and complexion and representing expression, is irresistible.

Mr. Griffiths' remarks on the Ajanṭa frescoes apply equally to the Sígiriya paintings. He says :—

> The artists who painted them were giants in execution. Even on the vertical sides of the walls, some of the lines which were drawn with one sweep of the brush struck me as being very wonderful ; but when I saw long, delicate curves drawn without faltering with equal precision upon the horizontal surface of a ceiling where the difficulty of execution is increased a thousandfold, it appeared to me nothing less than miraculous. One of the students when hoisted up on the scaffolding, tracing his first panel on the ceiling, naturally remarked that some of the work looked like child's work, little thinking that what seemed to him up there rough and meaningless, had been laid in by a cunning hand, so that when seen at its right distance every touch fell into its proper place.*

Mr. Griffiths continues :—

> The condition of mind in which these paintings were originated and executed must have been very similar to that which produced the early Italian paintings of the fourteenth century, as we find much that is in common. Little attention paid to the science of art—regard had more to the truthful rendering of a story than to a beautiful rendering of it ; not that they discarded beauty, but they did not make it the primary motive of representation. There is a want of aerial perspective—the parts are delicately shaded, not forced by light and shade, giving the whole a look of flatness—a quality desired in mural decoration.*

Elsewhere Mr. Griffiths dwells on the admirable drawing of heads and limbs, of ornament and dress, and specially of "the true rendering of hair—one of the most difficult things in the province of art"—praise fully borne out in the Ceylon frescoes of Sígiriya. A further marked feature of these ancient paintings is the predilection for *the three-quarter face*—a characteristic that alone separates the level of art

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* *Ind. Ant.*, vol. III., 1874, p. 26.

displayed, *toto coelo*, from the weak conventional "silhouettes" of present-day Sinhalese artists. Of the twenty-two faces left in "pockets" 'A' and 'B' at *Sígiri-gala* only three are in profile.

In one essential particular do the figures of the Sígiriya frescoes differ from the generality of those in the paintings at Ajaṇṭa: the latter are usually shown at full length from head to foot; *the Ceylon figures are all cut off short at the waist* by cloud effects, no doubt to economize space—a clever device, by which—to slightly vary Milton—"more is meant than meets the eye"; whilst the pose of the head and body, coupled with the action of the hands, conventionalised yet not unnatural, unmistakably convey the meaning the artist intended.

In some of the caves at Ajaṇṭa "on different parts of the walls two layers of painting can be distinctly traced," and the painting is "of two or even three periods."

Two coatings of colour are not unknown to the Sígiriya frescoes. A patch of the upper layer of chunam scaled off the *green* waist-cloth of figure No. 12 in "pocket" 'B' reveals an under-coating of *crimson*. For all we know—or can know without completely wrecking the present frescoes—this may signify nothing more than that a co-temporary artist was given a free hand to bring the ladies' dresses up to the "latest Court fashions," or, perchance for some peccadillo, to put the fair penitent (as in the case of the second figure in "pocket" 'A' literally) under a cloud.

The frescoes still to be seen on the western face of *Sígiri-gala* (casual patches of colouring excepted) are found now only in the two rock chambers or "pockets" ('A,' 'B') some 15 yards above the "gallery" floor at its south end. They consist of twenty-two half-figure portraits—one and all *female*. Of these, five are in "pocket" 'A,' seventeen in the larger chamber 'B.' All have suffered more or less from nesting swallows and the clay-building mason bee, some terribly.

SIGIRI-GALA

Lith: M.K Saldin & Co — D.L.G Perera del

FRESCOES IN "POCKETS" 'A' & 'B'

AS SEEN FROM MID-AIR

Scale, $\frac{1}{136}$ of Actual Size.

BRITISH MUSEUM
NATURAL HISTORY.

It is almost certain that there once existed three rows of such half-figures in "pocket" 'A' and four in 'B,' painted on the rock walls and projecting roof. Highest up in the first line remain the single hand (No. 17) and a very worn pair of figures (Nos. 15, 16); of the second row only faint traces here and there; to the third line belong frescoes Nos. 3 and 4 of 'A,' and Nos. 5, 6, 9, 10, 11, 12, and 14 of 'B'; whilst the fourth, or lowest, row is made up of Nos. 1, 2, and 5 of 'A,' and Nos. 1, 2, 3, 4, 7, 8, and 13 of 'B.'

The figures in "pocket" 'B' are above life-size; those of 'A' smaller than the ordinary human form—a divergence due to the proportionate wall-space available.

The scene intended to be pourtrayed would seem to be *a procession of the queens and princesses* of Kásyapa's court, with their attendants, on the way to worship at the Buddhist viháré at *Pidurá-gala*, the hill lying about a mile north of Sígiriya. The figures are manifestly all moving in that direction, and the flowers held in their hands by the ladies, and carried after them by servant-maids, can hardly bear any other signification. Grouping in pairs is chiefly favoured throughout: usually queen or princess followed by a lady-in-waiting of the same, or kindred, blood, or by a dark-skinned maidservant of alien race. The latter (Nos. 4, 8, 11 of 'B') are given a greenish complexion—a "badge of servitude" which clearly marks them off from the high-born dames, their mistresses, whether pale-yellow "blondes" or orange-hued "brunettes"—all three coloured types reproduced frequently at Ajanṭa.

Mr. Murray noted correctly "that the maid in each case has her bosom covered with a jacket similar to that worn by Tamil women at the present day." Of the ladies, he declares "many are nude to the waist"—an assertion for which, it must be admitted, he had, *primâ facie*, good grounds. As, however, I pointed out in my Report for last year—

A close examination confirms the counter-supposition (highly probable on other grounds) from the known *penchant* of Oriental sculptor and painter alike in bygone days for *ultra*-diaphanous

garments—a "strange conceit" which artworks of ancient India amply illustrate.*

The Ajanṭa paintings abound in female forms apparently "clothëd on with chastity" alone, but each in reality, like old Chaucer's Venus, "koverëd wel":—

> Ryght with a subtil keverchefe of Valence ;
> There was no thicker cloth of defence.

Every queen, princess, or court lady depicted in the Sígiriya frescoes is in reality modestly clothed in a coloured *kambaya* from the waist downwards, and above, in short-sleeved jacket of finest material—"a wondrous work of thin transparent lawn," so thin, indeed, that the painter has (as with figure No. 12) occasionally contented himself by indicating it only by a touch of orange colour at the neck.

Whatever opinion be held as to scarcity of clothing, there can be but one regarding the redundancy of ornament affected equally by queen or serving-woman. Coronets, tiaras, aigrettes crown the head ; flowers and ribbons adorn the hair ; whilst ears, neck, breast, arms, and wrists are loaded with a plethora of the heaviest ornaments and jewelled gauds. Some of the gold necklaces are exceedingly chaste, and the emeralds and rubies worn so "rich and rare" that each, if real, would be worth a king's ransom.

The figures in "pocket" 'A' may have no connection with those of the larger cave, though both seem to represent the same scene painted by two different artists ; for the rendering is as commonplace in the former as in the latter it is natural and spirited.

The paintings appear to have been first *outlined in with red or black*—perhaps by an artist different from the finisher of the pictures. Be this as it may, it is certain that the second worker did not slavishly follow the original outlines—indeed, the altered left hand of figure No. 8 'B' shows that at times he used his own discretion boldly.†

* C. A. S. Journal, vol. XIV., No. 47, 1896, p. 256.

† Mr. Murray has been *misled* by this ultimate departure from the curves as first put in, and varied, into the assertion that to the hands "have been added, in almost every case, an extra finger."

The type of features is Aryan—oval face, thick fleshy lips, but straight, almost Grecian nose and forehead. The "almond-eyes" of No. 1 'B' betoken a slight tinge of Mongolian blood.

I have styled these paintings "portraits," and, I venture to think, with reason. Unable to cast himself loose from all conventionalism, particularly in the stiff disposition of arms and hands, the artist—he, I mean, who executed the paintings in "pocket" 'B'—has imbued each figure with certain delicate traits in face, form, pose, and dress, which stamp it, *me judice*, unmistakably as an *individual likeness*. So skilfully in truth has the portrait painter worked that it appears possible not merely to gauge approximately each lady's age, but even, in great degree, "to find the mind's construction in the face."

These figures are no replicas of a flat, stereotyped image, "mute fixtures on a stuccoed wall"—degenerate art that wearies the eye at many a modern Buddhist temple in Ceylon. Here they live, they move, they have a being ; all is instinct with life and spirit.

Mark the fair princess (No. 1 'B') who has purposely taken the lead in the procession with her lady-in-waiting (No. 2). That dainty head saucily tossed back surely betrays, plainer than words, full consciousness of her undoubted charms. In her own eyes the "very pink of perfection," she essays to parade as "the glass of fashion and the mould of form, the observed of all observers."

Following her demurely at some distance is a second princess (No. 3), perhaps the staid elder sister, accompanied by a dusky maid of unattractive mien, carrying a rolled ola book.

Next, come two more court attendants (Nos. 5, 6), manifestly importuning a matronly queen (No. 7) to hasten her steps. The impassiveness of the royal lady is admirably brought out by a slight, but expressive touch—the deliberate unfolding, petal by petal, of a lotus bud she holds in her hands.

Or observe the impulsive eagerness of No. 9, another lady-in-waiting, chafing at the delay and appealing to the queen immediately following (No.10), who with right hand uplifted gently checks her impetuosity.

Succeeding No. 10, attended like Nos. 3 and 7 by a servant maid bearing a tray of flowers, is a princess of seventeen or eighteen years (No. 12), who may well be Kásyapa's daughter. Excellently has the artist caught the young girl's—

> Embarrassed look of shy distress,
> And maidenly shamefacedness

on the occasion of this—not improbably her initiation into a—public Court procession.

The figure behind is perhaps her mother, the queen consort, from whose well-chiselled face "Decay's effacing fingers" have still not "swept the lines where beauty lingers."

Last of all, calm and sedate, walks the queen mother (No. 14) absorbed in silent meditation. Can we doubt that that fixed gaze and dreamy look sadly speak to "thoughts too deep for tears"—a royal husband slain at Kalá-vẹwa ; a son, his slayer, ruling, but not reigning, at Sígiriya ; to a "past" no longer "sighed for, and a future sure."

Finally, contrast the peaceful serenity of this queen dowager with the "crabbed age" of the well-nigh repulsive beldame (No. 5) of "pocket" 'A,' or the vivacity and expression of figure No. 9 'B' with the stolid blankness on the faces of the dark-hued serving maids, or slaves (Nos. 4, 8, 11)—

> So coldly sweet, so deadly fair,
> All trace of *soul* is wanting there.

One word in conclusion. *Who were the authors of these unique paintings?* Were they executed by Siṇhalese "*sitiyaru*," or by foreign artists brought over from the continent of India ?

For myself, I make no doubt that they are the *production of exotic talent* specially imported by King Kásyapa for the single object of adorning his incomparable citadel.

The case for the Siṇhalese rests, I believe, on but two

props, both unreliable : first, the casual mention of oil painting in connection with the building and decoration of Ruwanveli Dágaba by King Dutugemunu about 80 B.C.; and secondly, the occurrence of one or two frescoes among the Ajanta paintings supposed to relate to Ceylon.

Could evidence be more slender ? Even if the *Maháwansa* record be held unimpeachable, what was there to prevent King Dutugemunu from securing his artists from the continent ? And as to the fancied Vijayan and other frescoes—if, indeed, the scenes be accurately allocated to this Island—the story of the migration to, and conversion of, Ceylon would be the common property of all Buddhists, whether of the northern (*Maháyana*) or southern (*Hinayana*) schools, and certain to find a place, with other Buddhistic legends, on the walls of the Ajanta caves.

On the other hand, there is the stubborn fact that nowhere else in Ceylon have similar frescoes, or other paintings rising to so high a standard of art, been yet discovered. There is nothing to equal them in the fragments left on the altars of the Anurádhapura Dágabas—on the walls of the so-called "Demala-mahá-seya" at Polonnaruwa—or in the countless caves of the northern part at least of the Island. The best painting at Dambulla Viháré, barely 12 miles from Sígiriya—a shrine famed for centuries before *Sígiri-gala* was occupied as a royal citadel—is not on a par with the least successful of these frescoes.

Intercourse with Buddhist India had for some length of time prior to the middle of the fifth century been, if not close, at least free and not slight. Nine reigns earlier, during the rule of Kírtti Srí Meghavarna, an Indian prince and princess had brought over the *Daladá*, or Tooth-relic, to be in future enshrined in Ceylon. And it was to India that Moggallána resorted for the army which finally captured his brother's stronghold at Sígiriya.

And strongest proof of all : no tradition exists that the skilled artists who executed the frescoes were Sinhalese ; nor regarding the methods whereby these paintings have

preserved their hues, despite the weathering of 1,400 years and upwards, with a freshness and brilliancy that is simply marvellous.

If the art of permanently "fixing" colours was ever indigenous to Ceylon, it is hardly reasonable to believe that it would have died out completely. In the East painters' guilds are among the oldest methods of painting, being jealously guarded and handed down from generation to generation with rigid conservatism. The Nilagama "*sitiyaru*" who closely examined them made no secret of the fact that the best modern work exposed to wind and sun, as are the Sígiriya frescoes, would not last twenty years.

Yet here still survives an imperishable monument of antiquity—painting dating back well-nigh a millenium and a half.

> Quod non imber edax, non aquilo impotens
> Possit diruere, aut innumerabilis
> Annorum series.

4. His Excellency the Governor: I now invite any gentleman present to make any remarks, or ask any questions, which he may think desirable to make or ask, in order to elucidate, if necessary, the very able and lucid lecture we have just heard.

After a pause—

5. Mr. J. Ferguson said the absence of the Acting Chief Justice, who was to have taken charge of the resolution, had entailed on him the duty of proposing a cordial vote of thanks to Mr. Bell for his interesting and instructive Paper.

Old residents, like himself, who recalled Mr. Bell's presence amongst them in Colombo, realized his (Mr. Bell's) self-denial, when in the course of duty, and in his enthusiasm for archæology, he had got banished to Anurádhapura. His labours there, year after year, under but half-hearted encouragement, were known to them all. Fortunately, greater interest and encouragement had been manifested under His Excellency's *régime*.

Now Mr. Bell had come to tell them of Sígiriya, to whose exploration he had given portions of the past three years; and, to aid in bringing home to them the marvels of that Rock Fortress, was exhibiting a brilliant display of paintings, so well executed by his Draughtsman, Mr. Perera.

He was not prepared to find Mr. Bell so firmly declaring the Sígiriya frescoes were the work of Indian rather than Siṇhalese artists; but

that view had been forced on himself by the contrast between what they saw around them on the walls this evening, in the variety as well as ability of the art displayed, and that presented by any of the paintings or illustrations elsewhere in Ceylon at the present day. The art at those Buddhist temples—if art it could be called—seemed (as with temple figures and illustrations in Egypt) to be stereotyped for 2,000 years.

As regards access to the summit, Mr. Bell knew of no more than a dozen Englishmen, all told, who had climbed the Rock previous to 1895 ; while he also incidentally mentioned that 20,000 persons at least had reached the top during the past three seasons—so great was the improvement in the means of ascent.

They would hope that, under increasing encouragement, the Archæological Survey—with which Mr. Bell's name will ever be identified—would progress satisfactorily, and that Mr. Bell would have many more Papers of interest to read to them.

They had to thank His Excellency and the Government for permitting the Paper to be read before the Royal Asiatic Society.

He would now move that Mr. Bell receive a very hearty vote of thanks (*applause*).

6. Mr. C. M. Fernando said that the very same accident which had made Mr. Ferguson propose the motion had obliged him to second it. And taken rather suddenly, he was sorry that he was not able to say as much as he should wish about Mr. Bell's work with regard to the Archæological Survey of the Island. But this much he could say, that as a Siṃhalese he was very thankful to Mr. Bell for helping to elucidate the ancient history of the country ; and thankful to the Government of Ceylon for giving Mr. Bell the opportunity of doing so.

He might also be excused if he expressed satisfaction at those fine frescoes. Not only had the copies been done by a Siṃhalese artist, but the originals, in his opinion, had been painted by Siṃhalese themselves. Some two years ago, when Mr. Bell's work at Sígiriya first came before the Royal Asiatic Society, he (Mr. Fernando) had ventured to make the suggestion that these frescoes were drawn, not by "exotic" artists—as Mr. Bell would have them understand—but by Siṃhalese artists.

He must say he had very slender material to substantiate that suggestion. Those materials were two copies of frescoes at Ajaṇṭa, and they related to the history of Ceylon. One of them depicted the introduction of Buddhism into Ceylon by Mahindu. Another fresco depicted the bringing of the Tooth-relic into the Island. The Ajaṇṭa paintings, Mr. Bell had said, closely resembled the figures they saw before them. He, therefore, hazarded the suggestion that it was not Tamil [*sic*] artists who came to Ceylon and painted those frescoes, but Siṃhalese artists who went over to India (*laughter*). His Excellency might think that was rather a bold theory for a young man like

himself to formulate at a Meeting of that Society; but he did not think that his position had been shaken at all by anything that had been said that evening.

He was not aware of any frescoes in India which were of the same class of painting, except the frescoes at Ajanṭa; and until India could establish some other precedent, he thought he could claim the credit for the Siṇhalese themselves. Apart from that fact, he had the authority of Sir Emerson Tennent for asserting that the earliest historical mention of oil painting was in the *Mahâwaṇsa.* Tennent mentioned that the Warrior King built the Ruwanvẹli Dágaba, and had frescoes painted on it in oil mixed with vermilion paint. The remains of those frescoes were still to be seen at the Ruwanvẹli Dágaba, which was built some two thousand years ago.

The use of oil painting was only forgotten, not lost, in Ceylon. At least, the method of painting in oils was there, although the skill in the art was lost. If it was argued that the paintings of the present day were not of the class of those they saw exhibited to-night, it might be said in the same way that the Siṇhalese did not build those monuments of engineering they saw in the great tanks and ruins in many parts of the Island, and that they were all built by Tamil, or "exotic," engineers; because they had not the same Siṇhalese engineers nowadays who could construct things in the same style. He asserted that the art of oil painting was known to the Siṇhalese, and that even to this day an oil was extracted in certain parts of the Island which was used for painting. The extraction of the oil was done in a very primitive fashion, but the liquid as used made a very good colour. He trusted that some day speculative gentlemen would make use of the oil, or possibly that the *Ceylon Observer* would take it up (*laughter*).

In conclusion, he expressed his great thanks to Mr. Bell, and hoped that the good work he had begun would be continued; and that in course of time, when he went to unlooked-for places, he would find still further frescoes which would release him from the impression under which he was labouring in regard to the inartistic character of the ancient Siṇhalese as regards painting.* He had much pleasure in seconding the motion.

7. HIS EXCELLENCY THE GOVERNOR, before putting the motion, said:—My lord, ladies, and gentlemen: I now invite you by hearty acclamation to pass the vote of thanks to Mr. Bell which has been proposed and seconded. Mr. Ferguson and Mr. Fernando have evidently interpreted the feelings of this audience with the same accuracy and sympathy as Mr. Bell has the "maiden meditation" of the beautiful young ladies on the frescoes (*laughter*). [To Mr. Bell:—

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* Mr Fernando subsequently reiterated his views in a letter to the *Ceylon Standard*, which called forth a reply from Mr. Bell. See Appendix.—*Hon. Sec.*

As your official chief I was rather shocked for a moment at your intimate acquaintance with the feelings of these ladies, and I began to fear a Breach of Promise case until I remembered how very much older they were than yourself (*renewed laughter*). In conveying to you the thanks of this Society, the thought occurs to me—How often have you received the thanks of this Chair; how often have you read Papers and done other useful work, and earned and received their thanks ?] However, I have no doubt Mr. Bell has been well rewarded. I can imagine, enthusiastic as he is, how pleased he has been to break away from the trammels of "red-tape" which usually surround him, and escape from cold official control ; when he finds himself in this hall of culture, in the presence of a sympathetic audience, how he must revel in delight. The icy *douche*, with which Government may occasionally quench his archæological ardour, is forgotten : he can dream, he can build magnificent castles—or shall we say dágabas—regardless of expense, knowing that he has the entire sympathy of his audience (*laughter and applause*).

Well, I will not pursue the strain ; but only repeat how much we have enjoyed the Paper which has been read, and how much we admire the effective way in which Mr. Bell has breathed life into what, in less skilful hands, would have been very dry bones (*applause*). I think this Society is to be congratulated upon having so valuable a Member, and the Government is to be congratulated on finding amongst the ranks of Civil Servants one so able, so capable, and, above all, so enthusiastic an archæologist (*applause*).

The vote was carried with hearty acclamation.

8. The Bishop of Colombo then rose and said :—It falls to me at this late hour very briefly to give expression to that which is in the minds of us all, the desire to thank Your Excellency for your presence here to-night (*hear, hear*). We have not only this duty, but also that of welcoming you on the first occasion in the capacity of Patron of this Society (*hear, hear*). We value the patronage of our Governor, and feel that your presence is not only the means of attracting a larger company than usual to our Meetings, but is evidence of the interest that clings round this special gathering.

I am very glad to think Your Excellency's presence to-day is in great measure, not merely to show your sympathy and to discharge your duty of patronage to this Branch of the Royal Asiatic Society, but also to show your approbation of him whom I shall not hesitate to call "*our* Mr. Bell" (*hear, hear*). He belongs to you, Sir, as a servant of the Government, but he belongs by extraction to the Royal Asiatic Society (*hear, hear, and laughter*). And we hope we may be able to make further requisitions on him for services like those which he has performed this evening (*hear, hear*)—services which demand such extraordinary combinations in himself and Mr. Perera. It has

been shown that they require, not only minute scientific knowledge and accuracy, but heroic efforts, which belong rather to the sphere of the athlete, or even of the aeronaut!

But while we all join in the thanks to Mr. Bell, we welcome Your Excellency's presence as an encouragement to ourselves and the Society. We are not always fortunate to have at our Meetings the results of great discoveries, or very brilliant or highly coloured scenes. We labour very often in humble corners, and in work which has its usefulness, though very little brilliancy. From time to time we read a Paper on some such subject as some particular bird, its method of making its nest, or of the way of preparing fish for stuffing, or some such practical details as promote the advance of Science. We believe that these things are useful; and probably they are the larger part of the work the Society can do. It is only on "field-days" of this kind that the Meetings of the Society are graced by a large company; and Your Excellency's presence is valuable for the encouragement it affords to us in our work. I will conclude by proposing to this company a very hearty vote of thanks to Your Excellency (*cheers*).

9. Mr. P. FREUDENBERG seconded the motion.

The vote having been received with acclamation—

10. HIS EXCELLENCY THE GOVERNOR, in reply, said:—My lord, ladies, and gentlemen: I am extremely obliged to you for the cordial reception you have given me: to you, my lord, for the very kind manner in which you have proposed this motion; to you, ladies and gentlemen, for the very kind manner in which you have received it. It is a great pleasure to me to be present to-night, and I feel that no thanks are due to me, but rather they are due from me, or they should be given to a more useful officer than the Patron—to the President, Your Lordship, who for many years has kept alive the torch of this Society (*hear, hear*). I am glad, however, of this opportunity of thanking you for the offer to me of the great honour to make me the Patron of this Society. I recognize that the position is purely honorary, a sinecure, or else I should have hesitated much before I accepted it. At a Scientific Society such as this I do not feel at all at home, though it has my sympathies; in fact, I feel like the fly in amber, who wondered how on earth he got there (*laughter*).

This Society has been independent of Government, and the Government does not grudge it that position. It is a very proud position, and I wish there were some other institutions in the Colony which could indulge in a similar position. This Society has done, and continues to do, excellent work. I am glad to see such a large number present; and I hope you are all Members of the Society, but if you are not, I trust you will be speedily. You may be independent of Government, but Government is not independent of you. Much of the scientific work undertaken by the Government of Ceylon has been due to the

insistence of this Society, especially as regards Archæology. If the Government has acted up to its responsibility as regards Archæology, it is due to the exertions of the Ceylon Asiatic Society.

I thank you very much for having received me so well, and for the honour you have conferred on me in making me a Patron to the Society. I hope I may again have the pleasure of attending your Meetings, not as Patron, but as a student sitting at your feet to receive instruction (*cheers*).

11. The proceedings then ended, but many ladies and gentlemen lingered some time to examine the copies of the frescoes painted by Mr. Perera, and the plans, drawings, photographs, &c.

APPENDIX.

The Sigiriya Frescoes.

To the Editor, *Ceylon Standard.*

Sir,—I had accepted the kind suggestion made by your contemporary, the *Ceylon Observer*, and had begun collecting materials for a Paper on oil-painting in general, both in ancient and modern Ceylon, when my attention was drawn to the remarks of two of your correspondents, and your own editorial comments on the subject. I would now point out that besides the frescoes at Polonnaruwa, there are to be found, at the present day, modern frescoes in nearly every viháré in the Island, mostly descriptive of the incidents in the many lives of Gautama Buddha.

What I understood Mr. Bell to say was that the Sígiriya frescoes were the only ones *of the kind* in the Island. In other words, that they formed a particular style of painting of their own, just as in Europe a picture of the Raphaelite school would differ in style from other paintings. The only frescoes of a similar style known to me are those in the Ajanṭa caves. These and the Sígiriya frescoes are co-temporaneous in date. Hence the conclusion, first put forward by me in 1895, and in which both Mr. Bell and I are agreed, that they represent the work of the same hands, or at least of the same school of artists. Taking this for granted, the question next arises as to whether this school consisted of artists from the Deccan, or of Siṇhalese artists. This is the point of difference between Mr. Bell and myself.

Mr. Bell's Paper was not printed and circulated before its reading; and thus Mr. Bell's theory of "exotic" artists came as a surprise to me at the recent Meeting of the Asiatic Society. Otherwise I should have been in a position to deal more fully and exhaustively with his theory, which, after all, is a mere surmise, for he adduces no reasons in its support.

It will be admitted that, *cæteris paribus*, the credit of painting frescoes found in Ceylon must, *primâ facie*, rest with the Sinhalese until the contrary is definitely established.

But, apart from this, I pointed to the significant fact that two of the frescoes at Ajanṭa, as pointed out by Fergusson and Manning, depict scenes from the *Maháwansa*, the ancient chronicle of Lanká. In fact, the absolute fidelity to detail as regards the introduction of Buddhism, and the preaching of Mahinda, can leave no doubt as to what was meant. Hence, I argued in favour of Sinhalese artists.

Mr. Bell made a point of the fact that the Sígiriya frescoes were the only ones of the kind in Ceylon. I replied by saying that those at Ajanṭa were just as unique as regards India; but omitted to notice that Mr. Bell had himself stated in his Paper that all the walls of the rock cave must originally have been covered with similar frescoes, of which the existing ones formed a very small portion, and that those only have escaped the ravages of time from the fact that they lay in so sheltered a position in the "pockets" of the rock temples. Thus, from Mr. Bell's own standpoint, there is nothing to prevent the supposition that these are the only existing frescoes of many that were painted, not only in Sígiriya, but in other places as well, in the fifth century of the Christian era.

Kásyapa was a prisoner-king. Betaking himself to the Rock Fortress of Sígiriya, he lay for eighteen long years in concealment, fearful of the vengeance of his brother Moggalána, from which he only escaped by the crime of suicide. It is difficult to understand the opportunities which this prisoner-king would have had to communicate with India, and to import therefrom "exotic" artists.

The presumption of "exotic" artists would imply that painting was the only art in which the ancient Sinhalese were lacking, great as they admittedly were in sculpture, architecture, engineering, &c.

King Duṭugemunu (161 B.C. to 137 B.C.), after having defeated the Tamil invader Elála, built the huge Ruwanveli (gold-dust) Dágaba to commemorate his victory, and the *Maháwansa* records that its walls were covered with pictures painted with "vermilion paint mixed with *tala* (gingelly) oil." On this, the first known historical mention of oil-painting, Sir Emerson Tennent bases his claim to the discovery of oil-painting on behalf of the Sinhalese. To prove that the *Maháwansa* recorded a fact, I make the following quotation from Burrows' description of this Dágaba in the *Buried Cities of Ceylon*, p. 31: "Many traces of the gaudy painting which formerly adorned (or disfigured) these altars may still be seen."

In the face of all these facts I may be excused if I fail to adopt Mr. Bell's theory of "exotic" artists.

Yours truly,

C. M. FERNANDO.

To the EDITOR, *Ceylon Standard*.

SIR,—SOME one has been good enough to send me a copy of your issue of the 20th instant, containing a letter by Mr. C. M. Fernando, and a short editorial paragraph, relating to the "Sígiriya Frescoes."

I note that Mr. Fernando has returned to the charge, in defence of his theory of Sinhalese authorship for the paintings at Sígiriya.

I do not propose to enter here fully into the disputed question of their execution by native or foreign artists; this I hope to do later

in my Archæological Report on "Sígiriya." I desire now merely to correct one or two inaccuracies into which Mr. Fernando has slipped.

It may be assumed once for all that the frescoes at Ajanṭa in India, and those on the Sígiriya Rock, were executed, if not by the same hands, at least by artists trained in the same school.

Mr. Fernando's arguments against the importation of "exotic talent" for the painting of the Sígiriya frescoes may best be quoted, and briefly touched on *seriatim* :—

(1) "*Cœteris paribus*, the credit of painting frescoes found in Ceylon must, *primâ facie*, rest with the Siṉhalese."

Granted : but "other things are" *not* "equal"; little Ceylon is not giant India ; the field of selection for competent artists is about one to sixty.

(2) "Two of the frescoes at Ajanṭa, as pointed out by Fergusson and Manning [*sic*], depict scenes from the *Maháwaṉsa,* the ancient chronicle of Laṉká."

The scenes referred to are—(*a*) the supposed landing of Vijaya in Ceylon ; and (*b*) the supposed introduction of Buddhism into the Island—given by Mrs. Speir in her *Life in Ancient India.*

As regards (*a*), Mrs. Speir rightly remarks that the picture—from the horse-worship introduced into it—illustrates "a *northern* adaptation of the story in the *Maháwaṉsa*, related in a Nepalese work of Avalókitéṣwara," who saved "Siṉhala" (Vijaya) in the form of a horse. The Siṉhalese have always belonged to the *Hinayana* ("Lesser Vehicle") school of Buddhism, which knows not Avalókitéṣwara, the Bodhisatva of the northern *Maháyana*, or "Greater Vehicle." Much the same comment applies to (*b*). It may equally as well have been based on Northern Buddhist works as taken from the *Maháwaṉsa* of the Southern school—if, that is, the painting has anything whatever to do with the meeting between Mahinda and King Devanampiya Tisa.

(3) "Mr. Bell made a point of the fact that the Sígiriya frescoes were the only ones of the kind in Ceylon. I replied by saying that those of Ajanṭa were just as unique as regards India."

The Ajanṭa paintings are not "unique" in the sense of the frescoes at Sígiriya. It is true that the former (as Fergusson records) "represent Buddhist legends on a scale and with a distinctness found nowhere else in India." But there are other frescoes which in beauty of execution run them very close – if, indeed, they do not surpass them ; and which prove further that the art retained its full vigour for many centuries longer on the Indian continent. I refer to the wonderful paintings to be seen at Fathpur-Sikri, near Agra, the "royal abode" of Akbar in the sixteenth century. Here, in Ceylon, we have nowhere else mural painting attaining the standard of art exhibited in the Sígiriya frescoes.

Again, had Kásyapa employed Siṉhalese *sitiyaru* to adorn the walls of his marvellous citadel, it may reasonably be inferred that the services of the ancestors of the Nilagama guild of painters would have been enlisted : yet at this day no tradition even lingers among these hereditary craftsmasters, whose work at the ancient Dambulla cave temple goes back to an earlier date than the occupation of Sígiriya as a capital. Shown the Sígiriya frescoes in the "pockets" themselves last year, these Nilagama men declared their inability to

explain the process by which the colours have been permanently "fixed," or to attempt to "restore" them in any degree.

(4) "Thus, from Mr. Bell's own standpoint, there is nothing to prevent the supposition that these are [not] the only existing frescoes of many that were painted, not only at Sígiriya but in other places as well, in the fifth century of the Christian era."

Nothing at all, as far as Sígiriya is concerned, but a great deal as regards "other places" throughout Ceylon. If I have examined one ancient cave viháré, &c., in the Central, North-Western, and North-Central Provinces, I have examined well nigh a thousand—and any painting rivalling the art displayed in the Sígiriya frescoes I have still to find. The surface painting faintly traceable on the "altars" of some of the larger dágabas of Anurádhapura, on the walls of the so-called "Demala-mahásẹya" at Polonnaruwa, or in the caves of Handa-gala and Dimbula-gala, is not devoid of merit, but belongs to a lower grade of art than the frescoes of Ajanṭa and Sígiriya.

(5) Mr. Fernando harps on the allusion in the *Maháwaṉsa* to the use of "vermilion paint mixed with *tala* oil" for the ornamentation of Ruwanvẹli Dágaba when built by King Duṭugẹmunu (first century B.C.); and quotes Sir Emerson Tennent in support of the "claim to the discovery of oil-painting on behalf of the Siṉhalese," upon this single shred of not too reliable evidence.

Very good: let us admit, for the moment, that the honour of the discovery actually rests with the Siṉhalese,—though it really needs considerably more proof; let us go further and assume that Duṭugẹmunu did not go to the continent of India for his artists—as, for all the *Maháwaṉsa* tells us, he well may—what then? He must be a bold man that would assert that the descendants of the Siṉhalese (if Siṉhalese they were) who painted the Anurádhapura Dágaba "altars" were capable of designing, and carrying out, the life-like frescoes of Sígiriya. Moreover, as is well known, Oriental art is strongly conservative—follows slavishly stereotyped forms and methods. Is it probable—is it even possible—that the art of fresco-painting among the Siṉhalese could have risen to the high level of Sígiriya in the fifth century, and gradually degenerated into the travesty which offends the eye and excites ridicule at the modern Buddhist temples of Ceylon?

(6) "Kásyapa was a prisoner-king. Betaking himself to the Rock Fortress of Sígiriya, he lay for eighteen long years in concealment, fearful of the vengeance of his brother Moggallána, from which he only escaped by the crime of suicide. It is difficult to understand the opportunities which this prisoner-king would have had to communicate with India, and to import therefrom 'exotic' artists."

"Prisoner-king,"—presumably a sort of "ticket-of-leave" prince; allowed by the considerateness of a younger brother to have for *only* "eighteen long years" the run of the Island, provided he kept in decent "concealment." To Kásyapa's credit, be it said, he behaved exceedingly well during his period of "probation"; he committed no more murders; he did not worry Moggallána (who, by the way, appears to have found it "convenient" to cross over to India, so as not to embarrass his elder brother in the least); he merely amused himself by erecting, at vast labour and expense, a magnificent royal citadel—just to show what honest "concealment" meant. Of course, under such conditions, intercourse with India would be quite impossible.

(7) " The presumption of ' exotic ' artists would imply that painting was the only art in which the ancient Sinhalese were lacking, great as they admittedly were in sculpture, architecture, engineering," &c.

This opens up a far wider question, and one that must not be "begged." Is Mr. Fernando prepared to prove that the *Sinhalese* were "*great*" in "sculpture, architecture, engineering," &c.? Will he favour the Asiatic Society with a Paper on " The Characteristics of the *Sinhalese* style of Ancient Architecture, as distinct from the Buddhistic and Dravidian styles found in India"? I do not say the task is impossible; but it is not to be undertaken hastily. At present there is much ground for the supposition that *the Sinhalese kings imported skilled artizans from the continent* to execute very many of the ancient monuments of Anurádhapura, Polonnaruwa, &c., commonly attributed to the Sinhalese. Few are the forms of building and sculpture which cannot be easily traced to an Indian source.

Yours faithfully,

Anurádhapura, January 22, 1898. H. C. P. Bell.

30 AUG. 98

BRITISH MUSEUM NATURAL HISTORY

H. C. COTTLE, ACTING GOVERNMENT PRINTER, COLOMBO, CEYLON.

JOURNAL

OF THE

CEYLON BRANCH

OF THE

ROYAL ASIATIC SOCIETY,

1898.

BRITISH MUSEUM NATURAL HISTORY

VOLUME XV.

No. 49.

EDITED BY THE HONORARY SECRETARY.

The design of the Society is to institute and promote inquiries into the History, Religions, Languages, Literature, Arts, and Social Condition of the present and former Inhabitants of the Island, with its Geology and Mineralogy, its Climate and Meteorology, its Botany and Zoology.

Price to Members, Re. 1; to Non-Members, Rs. 2.

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JOURNAL

OF THE

ROYAL ASIATIC SOCIETY,

CEYLON BRANCH.

COUNCIL MEETING.

Colombo Museum, February 5, 1898.

Present:

The Hon. Mr. Justice A. C. Lawrie, Vice-President, in the Chair.

Mr. J. Ferguson.
Mr. P. Freüdenberg.
Mr. F. M. Mackwood.
Dr. W. G. Vandort.

Mr. G. A. Joseph, Honorary Secretary.

Business.

1. Read and confirmed Minutes of Council Meeting held on December 8, 1897.

2. Laid on the table Circular No. 133, regarding a Paper "Aids to the Identification of Birds recorded from Ceylon," by Mr. A. Haly, referred to Mr. Staniforth Green and the Lord Bishop of Colombo, for their opinions.

Resolved,—That the Paper be accepted, and be printed in the Society's Journal, and Mr. Haly be thanked for forwarding it, and asked to kindly prepare a portion for reading at a General Meeting of the Society.

3. Laid on the table Circular No. 134, regarding a Paper entitled "Don Jeronimo da Azevedo, Governor of Ceylon, 1594–1611 A.D.," by Mr. A. E. Buultjens, referred to Mr. P. Freüdenberg and Dr. W. G. Vandort, for their opinions.

Resolved,—That the Council approve of the suggestions made by the gentlemen to whom it was referred, and that their remarks

be forwarded to Mr. Buultjens, with a request that he will have the manuscript translation revised as suggested.

4. Resolved, — That the following Candidates for election as Resident Members be elected :—

P. E. Pieris, C.C.S. :	nominated by	S. C. Obeyesekera. W. Chapman Dias.
I. Gunawardene :	do.	T. B. Panabokke. E. R. Gooneratne.
G. W. Suhren : W. H. Figg : F. Macindoe :	do. do. do.	E. Booth. F. C. Roles.
E. E. Green, F.E.S. :	do.	Staniforth Green. G. A. Joseph.

5. Read letter from Mr. Harward requesting that his resignation be accepted, as he will not be able to read Papers at Society Meetings.

Resolved,—To keep Mr. Harward's name on the list of Honorary Secretaries, and that he be informed that he will continue an Honorary Secretary on the understanding that no Papers need be read by him.

6. Draft Annual Report for 1897 was laid on the table and passed, subject to certain amendments.

7. Considered nomination of Office-Bearers for 1898.

Under Rule 16 Messrs. J. P. Lewis and F. H. de Vos retire by least attendance.

Resolved,—To nominate the following Office-Bearers for 1898 :—

President.—The Right Rev. the Lord Bishop of Colombo.

Vice-Presidents.—The Hon. Mr. Justice A. C. Lawrie and Mr. Staniforth Green.

Council.

Mr. O. Collett.
Mr. P. Coomáraswámy.
Mr. J. Ferguson.
Mr. C. M. Fernando.
Mr. P. Freüdenberg.
Mr. A. Haly.
Mr. F. M. Mackwood.
Mr. F. H. Modder.
Mr. P. Rámanáthan, C.M.G.
Mr. W. P. Ranasinha.
Mr. E. S. W. Senáthi Rájá.
Dr. W. G. Vandort.

Honorary Treasurer.—Mr. F. C. Roles.

Honorary Secretaries.—Mr. H. C. P. Bell, C.C.S.; Mr. J. Harward, M.A.; and Mr. G. A. Joseph.

8. Resolved,—That the Annual General Meeting be held on Saturday, February 26, 1898, and the following be the business :—

(1) To submit the Council's Annual Report for 1897.
(2) To elect Office-Bearers for 1898.
(3) To move, on the recommendation of the Council, that Mr. H. C. P. Bell, C.C.S., Archæological Commissioner, be elected an Honorary Member of the Society in recognition of the valuable services rendered by him to the Society for a period of seventeen years.

9. Resolved,—That Mr. E. Booth be kindly asked to audit the Society's accounts for last year.

ANNUAL GENERAL MEETING.

Colombo Museum, February 26, 1898.

Present :

The Hon. Mr. Justice A. C. Lawrie, Vice-President, in the Chair.

Mr. Staniforth Green, Vice-President.

Mr. W. N. S. Aserappa.
Mr. M. Cochran.
Mr. C. M. Fernando.
Mr. P. Freüdenberg.
Mr. A. Haly.
Mr. J. A. Henderson.
Dr. W. A. de Silva.
Dr. W. H. de Silva.
Dr. W. G. Vandort.

Mr. F. C. Roles, Honorary Treasurer.

Mr. G. A. Joseph, Honorary Secretary.

Visitors : one lady and five gentlemen.

Business.

1. Read and confirmed Minutes of General Meeting held on December 22, 1897.

2. Mr. Joseph announced the election of the following Members :— P. E. Pieris, C.C.S. ; I. Gunawardene ; G. W. Suhren ; W. H. Figg ; F. Macindoe ; E. E. Green, F.E.S.

3. Mr. Joseph read the following—

ANNUAL REPORT FOR 1897.

The Council of the Ceylon Branch of the Royal Asiatic Society have the honour to submit the following Report for the year 1897 :—

Meetings.

Five General Meetings of this Society have been held during the year, at which the following Papers were read and discussed, viz. :—

(1) "Interim Report on the Operations of the Archæological Survey of Sígiriya (Second Season), 1896," by H. C. P. Bell, C.C.S., Archæological Commissioner.

(2) "Contributions to Ceylon Malacalogy," by O. Collett, F.R.M.S.

(3) "Ancient Cities and Temples in the Kurunẹgala District : IV., Dambadeṇiya," by F. H. Modder.

(4) "A Geological and Mineralogical Sketch of the North-Western Province," by F. H. Modder.

(5) "Some Illustrations from the Fauna of Ceylon of Wallace's Theory of Natural Selection," by A. Haly, Director, Colombo Museum.

(6) "Interim Report on the Operations of the Archæological Survey of Sígiriya (Third Season), 1897," by H. C. P. Bell, C.C.S., Archæological Commissioner.

MEMBERS.

During the past year five new Members were elected, viz., G. C. Lee, H. B. Preston, J. E. Addyman, J. W. Small, and N. Balasubramanyan, M.A. The Council note with satisfaction that applications continue to be received for admission as Members.

Six Members resigned, viz., J. Alexander, B. W. Bawa, S. Bois, L. d'Espagnac, Dr. M. N. Gandevia, and P. E. Radley.

The Society now has on its roll 188 Members, including 17 Life Members and 9 Honorary Members. Your Council has decided to recommend that Mr. H. C. P. Bell, C.C.S., Archæological Commissioner, be appointed an Honorary Member of the Society in recognition of the valuable services rendered by him for a period of seventeen years, and his name will be submitted at the Annual General Meeting for election.

The Council record with regret the death of the following Members :—S. Nagalingam, Advocate, and Hugh Nevill, C.C.S., F.Z.S.

By the death at Hyères on April 10 of Mr. Hugh Nevill the Society has been deprived of an energetic and valuable Member, and Science has lost an enthusiastic worker in many fields. Mr. Nevill was an indefatigable collector. He had discovered and described many new species in Zoology, and had contributed many specimens to Museums. His collection of birds passed to the late Marquis of Tweedale, but he left a very complete collection of certain genera of shells. For some years Mr. Nevill edited and published at his own cost "The Taprobanian." Mr. Nevill has left what is probably a unique collection of specimens of the ancient Kandyan silver work, an art which he took an active part in reviving. Mr. Nevill, from his intimacy with Buddhist priests and other native scholars, had unusual facilities for collecting manuscripts, and left behind a most valuable collection of ancient Buddhist and Páli manuscripts. A *Catalogue raisonné* of these was prepared for publication, and the late Dr. Rost of the India Office was anxious that it should be published . The catalogue is complete : Mr. Nevill took it with him in order to superintend its publication in England ; but was unable to rally from the illness that had necessitated his leaving Ceylon.

Mr. Nevill joined the Society in 1865. He contributed to the Society's Proceedings the following Papers :—

(1) Description of Two Birds new to the recorded Fauna of Ceylon (Vol. IV., No. 14).

(2) Description of a New Genus and Five New Species of Marine Univalves from the Southern Province, Ceylon (Vol. IV., No. 14).

(3) Notes on the Geological Origin of South-Western Ceylon (Vol. V., No. 16).

(4) Further Notes on the Ornithology of Ceylon (Vol. V., No. 16).

(5) The Ancient Emporium of Kálah, &c., with Notes on Fa-Hian's Account of Ceylon (Vol. VII., No. 24).

The following is a list of his principal writings :—

(1) On some New Marine Gastropoda from the Southern Province of Ceylon (Journ. Ben. As. Soc., XXXVIII., Part II.).
(2) Descriptions of Marine Gastropoda from Ceylon (Journ. Ben. As. Soc., XXXVIII., Part III.).
(3) Note on Onchidium Verruculatum, Cuv., from Ceylon (Proc. Ben. As. Soc., 1870).
(4) New Marine Mollusca from the Indian Ocean (Journ. Ben. As. Soc., XLIII., Part II.).
(5) New Marine Mollusca from the Indian Ocean (Journ. Ben. As. Soc., XLIV., Part II.).
(6) Oriental Studies (Parts I. and II.), 2 vols.

Library.

The additions to the Library during the year numbered 203 volumes. The acquisitions are chiefly exchanges received from Societies. The Library is indebted for donations to the following :—The Trustees of the Indian Museum ; the Government of Bengal ; A. Mendis Gunasekera ; R. Narayan Apte ; the Government of India ; the Hon. Mr. Justice Lawrie ; J. P. Lewis, C.C.S. ; the Government of Ceylon ; the Government of Madras ; the Government of Bombay ; the Secretary of State for India in Council ; H. C. P. Bell, C.C.S. ; the Colombo Museum ; J. B. Chapman ; the Director of Public Instruction, Batavia ; the Geological Survey of Canada ; the Director of State Archives, the Hague ; the Government of North-Western Provinces and Oudh.

For valuable exchanges received during the year the Society is indebted to the following :—The American Oriental Society ; the Buddhist Text Society of India ; Bijdrajen tot de Taál-Land en Volkenkunde van Nederlandsch-Indie, the Hague ; the Royal Asiatic Society of Great Britain and Ireland ; the Royal Society of Victoria ; the Geological Society of London ; the Smithsonian Institution ; K. K. Naturhistorischen Hofmuseums, Vienna ; the Musee Guimet, Paris ; Deutsche Morgenlandische Gessellschaft, Leipzig ; Société Imperiale des Naturalistes de Moscou ; the Anthropological Society of Great Britain and Ireland ; the Bureau of Education, Washington ; the Anthropological Society of Bombay ; the Pekin Oriental Society ; the Asiatic Society of Bengal ; the Bombay Branch of the Royal Asiatic Society ; the Royal Colonial Institute ; the Straits Branch of the Royal Asiatic Society ; the University of Upsala ; Société Zoologique, Paris ; Genootschap van Kunsten en Wetenschappen, Batavia ; the Royal Society of New South Wales ; the Asiatic Society of Japan.

The Council desire to draw the attention of the Government to the remarks made in previous Annual Reports regarding inadequate accommodation for its Library. The need of sufficient room for books has been much felt for some years now—a need which Government has admitted. An extension of the building will alone meet the emergency, and it is hoped the long-deferred extension will be shortly undertaken. The Committee of the Colombo Museum, recognizing the congestion now apparent everywhere in the Library, recommended the extension of the eastern wing of the Museum, and a sum of Rs. 40,000 was voted for the purpose in 1891, but owing to some disagreement as regards

the particular plan of extension to be adopted, the money was allowed to lapse to revenue. Both the Museum Library and that of the Asiatic Society require additional space, not only for present requirements, but to allow for future development.

JOURNALS.

One number of the Journal has been published during the year (Vol. XIV., No. 47, 1896), which contains, in addition to the Proceedings of the Council and General Meetings, the following Papers :—

(i.) " Legislation in Ceylon in the early portion of the Nineteenth Century," by H. White, C.C.S.

(ii.) " On a Curious Nematoid Parasite from the Stomach of a Ceylon Insect (*Mantis Religiosa*)," by O. Collett, F.R.M.S.

(iii.) " How the last King of Kandy was captured by the British," by T. B. Pohath.

(iv.) " Ancient Cities and Temples in the Kurunégala District : II., Ridí Viháré," by F. H. Modder.

(v.) " The Inauguration of the King in Ancient Ceylon," by C. M. Fernando, B.A., LL.B.Cantab., M.R.A.S.Eng.

(vi.) " Ancient Cities and Temples in the Kurunégala District : III., Panduwas Nuwara," by F. H. Modder.

(vii.) " Robert Knox's Sinhalese Vocabulary," by D. W. Ferguson.

(viii.) " Place Names in the Vanni," by J. P. Lewis, C.C.S.

(ix.) " Reland on Malay, Sinhalese, and Tamil," by J. P. Lewis, C.C.S.

(x.) "Note on the Fortifications of Yápahuwa," by J. Harward, M.A.

(xi.) " Interim Report on the Operations of the Archæological Survey at Sígiriya (Second Season), 1896," by H. C. P. Bell, C.C.S., Archæological Commissioner.

The Journal for 1897 is nearly complete, and will be issued shortly.

The Council still constantly receive applications from Societies and Institutions for exchanges or for donations of our Journal. These applications, though in some cases the Council have been obliged to refuse owing to their number, yet afford gratifying testimony of the increasing appreciation entertained for the publications of the Society.

The Council trust that it will be possible to have further reprints made of the early issues of the Journal, as these numbers are very scarce and the demand for them great.

ARCHÆOLOGY.

It is with feelings of satisfaction that the Council refer to the progress that has been made during the year in the systematic survey of the archæological remains of the Island.

The Council again acknowledge indebtedness to the Archæological Commissioner for a *resumé* of the work performed by the Archæological Survey last year.

General.

The vote for 1897 was Rs. 34,620, including salaries ; this, as in 1896, proved sufficient for only nine months' field work. Application made to the Government for a supplementary vote of Rs. 5,000 was favourably met, permitting the Archæological Commissioner to carry on excavations uninterruptedly to the end of the year.

Anurádhapura.

In Anurádhapura excavations were continued at Thúpáráma, at "Eláḷa's Tomb," and at Puliyankuḷam.

Thúpáráma Ruins.

With the completion of the buildings immediately surrounding Thúpáráma Dágaba, the labour force was divided into two parties, one continuing to unearth the countless boundary walls and ruins scattered between Thúpáráma and Ruwanveli on the south in the "park," which is bounded east and west by the "Sacred Road" and Basawakkuḷam tank; the other, set to start work within the supposed "Royal Enclosure," at the solitary brick building of Polonnaruwa type and pillared sites adjoining it that are situated in unfelled jungle a quarter mile north of the "Inner Circular Road." As usual, it was found that for one building barely traceable above ground, half a dozen came to light as trenches ran onwards.

Eláḷa Sohona.

The wide trenches begun in 1896 from north and east into the wooded hillock commonly styled "Eláḷa's Tomb," have been pushed on until the brick wall of some structure (apparently of dágaba form) has been struck, where the cutting gives a vertical height of 60 ft.

Progress at this mound is necessarily slow, owing to the limited space for working, the constant danger from falling *talus*, and the difficulty of getting rid of "spoil."

Puliyankuḷam Ruins.

After finishing, cleanly, the dágaba and three vihárés within the inner quadrangular *temenos*, the gang working here attacked the group of three or four ruins lying to the north of "MacBride's Deviation," near the large *pokuṇa*. At this point digging is tedious and laborious work; for the site is thickly covered with trees, and the buildings were originally constructed of brick and mortar (now caked into a hard concrete), rising from bold stone basements, buried 4 ft. to 5 ft. below the present surface of the ground. The largest building has still to be examined; but it is evident that this cluster —wanting at Vijayáráma the sister establishment—contains the chief residence of the monks of the Puliyankuḷama monastery.

Sígiriya.

The results of the third season's work at Sígiriya have been recently laid before the Society in the Archæological Commissioner's "Interim Report on the Operations of the Archæological Survey, 1897," placed at the Society's disposal by Government. Briefly, the excavation of the citadel on the summit of *Sígiri-gala* was rounded off by the laying bare of the rooms, &c., along the western edge, the remaining sixteen of the unique frescoes in the "pockets" above the "gallery" faithfully reproduced on canvas, and the topographical survey of the ancient city (*Sígiri-nuwara*) extended so as to include all outlying bunds, &c.

A final season at Sígiriya in 1898 will be devoted to excavations at the base of the rock and its *entourage*.

Circuit Work.

A very successful tour, on foot, of nine weeks' duration, was accomplished during August, September, and October, in the course of which practically the whole of Tammankaḍuwa was explored to its uttermost confines. The unseasonable rains that fell in August and September greatly incommoded exploration and hampered the march in a district where numerous streams rapidly become unfordable from sudden freshets.

Starting on August 16 from Aḷut-oya the expedition proceeded south-east through Dimbulankaḍawala, Minnériya, Tópávẹwa (Polonnaruwa), Dástoṭa—where the Maháwẹli-ganga was crossed—Yakkuré, and Huruvila, to Kuḍa-ulpota at the foot of Dimbulu-gala. Nearly a week was spent in the examination of the ancient caves, &c., occurring on the slopes of this majestic hill, "Gunner's Quoin," a well known landmark to vessels coasting round the east of the Island. To the east of Dimbulu-gala lies the *Vẹdiraṭa* of Tammankaḍuwa—a wild waste, uninhabited, save by a few miserable "clans" of "Village Vẹddás." The furthest of these Vẹddá hamlets, Kohombalẹwa, is placed on the right bank of the Mádara-oya, 20 miles beyond the Maháwẹli-ganga, and about 100 miles from Anurádhapura at the extreme south-east corner of the North-Central Province. Turning north, homewards, from this limit, on September 17, down the Mádara-oya, through Belanwala and Ginidamana (Vẹddás) to Muttugala, and re-crossing the river at Kandakáḍu, the rest of the journey lay north-east *viâ* Sungavali, Paliyagodẹlla, into the Kalẹgam pattu (Wádigéva and Nikavẹwa), until the Trincomalee road was reached again on October 6 at Kanthalai.

Many places of considerable archæological interest have been mapped and examined as the outcome of this long circuit, and an addition beyond expectation made to the existing list of the lithic inscriptions of Ceylon.

Miscellaneous.

In 1895 the Asiatic Society handed over to the Archæological Commissioner the balance of an old "Anurádhapura Excavation Fund," to be expended in the partial restoration of the ruined "Buddhist Railing" at Anurádhapura. This work has at length been completed by the Public Works officers, to whom it was entrusted; and the "Railing," as restored, is among the most strikingly beautiful specimens of ancient architecture to be seen anywhere throughout the Island.

COUNCIL.

Two Members of the Council of 1896, viz., Messrs. P. Rámanáthan and H. F. Tomalin, A.R.I.B.A., being by virtue of Rule 16 deemed to have retired by least attendance, the vacancies were filled by the appointment of Messrs. J. P. Lewis, C.C.S., and F. H. de Vos, Advocate. Messrs. Freüdenberg and F. M. Mackwood, who under the same Rule vacated their places by reason of seniority, were re-elected. Mr. A. Haly, Director of the Colombo Museum, was appointed to fill the vacancy in the Council caused by Dr. Trimen's death.

Mr. J. Harward (one of the Honorary Secretaries of the Society) was obliged to leave the Island in October last owing to ill-health, and tendered his resignation. The Council, however, decided not to

remove his name from the list of Office-Bearers for 1897. The Council regret the cause of Mr. Harward's leaving Ceylon, and trust they will not lose his services in the future as an Honorary Secretary of the Society.

The Lord Bishop of Colombo, President, and Messrs. F. H. Price, C.C.S., and P. Freüdenberg, Members of the Council, were absent from the Island for a few months during the year.

Finances.

The Treasurership was resumed by Mr. F. C. Roles in February on his return to the Island, Mr. F. Lewis having kindly acted during the preceding four months.

It will be noticed that the balance has fallen from Rs. 915·82 to Rs. 831·50, but the year has been an unfavourable one for collecting subscriptions, owing partly to the special calls on Members for the Indian Famine Fund and for the Record Reign celebrations. The Treasurer has not submitted a list of defaulters, believing that with extended time most of them will be able and willing to pay up their arrears.

Mr. E. Booth has been good enough to again perform the duty of auditing the accounts.

Co-operation of Members.

In conclusion, the Council observe with much satisfaction that the Society continues to promote the objects for which it was instituted. The Council invite the co-operation of Members in the work of the Society, and would welcome suitable Papers in any of the lines of study which it is the aim and object of the Society to encourage.

Balance Sheet for the Year ended December 31, 1897.

RECEIPTS.		Rs. c.
Balance in hand on December 31, 1896 ...		915 82
Sale of Journals		282 75
Entrance Fees		36 75
Annual subscriptions :—		
1892	10 50	
1893 ...	42 0	
1894	52 50	
1895	89 25	
1896	157 50	
1897	687 75	
		1,039 50
Government grant for 1897		500 0
Total ...		2,774 82

EXPENDITURE.	Rs. c.
Books account	73 26
Printing account (Journal)	781 41
Charges account (clerk's salary, binding, general printing, stationery, advertising, postage, Public Hall meeting, and sundries) ...	1,088 65
Balance at Bank of Madras	831 50
Total ...	2,774 82

Audited and found correct :
E. BOOTH.

F. CROSBIE ROLES,
Treasurer.

4. The Chairman said that the Council had tried—and he hoped successfully—to lay before Members all that had occurred since the last Annual General Meeting. There had been named the losses that had been sustained and the successes which had attended the Meetings of the Society. The financial condition of the Society had also been placed before them ; and they had also been told of the work the Archæological Commissioner had done. It now remained for him as Chairman to ask any Member of the Society present to criticise, or to approve, of what had been put before them by the Council.

5. Mr. C. M. Fernando remarked that after what had fallen from the Chair much did not remain to be said. He moved that the Report and Balance Sheet be adopted.

He would commend more especially to the attention of the Meeting the sympathetic reference which the Report contained to the loss the Society has suffered by the death of Mr. Hugh Nevill. Mr. Nevill was known as an Orientalist, not only in Ceylon, but in Europe and America : here he had been known to them not merely as an English gentleman, but as a not unsuccessful student of the native languages. He revelled in the past history of Ceylon, and had striven hard to bring out the very intimate connection between Ceylon and India.

With the work of the Archæological Commissioner referred to in the Report, they all sincerely sympathized (*hear, hear*), and they trusted that the Government would help it more than it was doing at the present moment. It called loudly for further encouragement and assistance by the Government. They had the authority of very many who understood the subject, that at the rate the work was progressing now it would take a very long time before the Archæological Survey was finished.

6. Dr. W. G. Vandort seconded the motion, which was carried.

7. Mr. Roles moved that a copy of the paragraph in the Report referring to the lack of accommodation at the Museum should be forwarded to the Government. The matter had been mentioned in previous Reports, and the Museum authorities also referred to it ; but hitherto the Society had been content to let it simply appear on its records. He thought it would be well to specially invite the attention of Government towards the pressing want, instead of leaving it simply to appear in this Report.

8. The Chairman in concurring with Mr. Roles added that the paragraph was as follows :—

" The Council desire to draw the attention of the Government to the remarks made in previous Annual Reports regarding inadequate accommodation for its Library. The need of sufficient room for books has been much felt for some years now—a need which Government has admitted. An extension of the building will alone meet the emergency, and it is hoped the long-deferred extension will be shortly undertaken. The Committee of the Colombo Museum, recognizing the congestion now apparent everywhere in the Library, recommended the extension of the eastern wing of the Museum, and a sum of Rs. 40,000 was voted for the purpose in 1891, but owing to some disagreement as regards the particular plan of extension to be adopted, the money was allowed to lapse to revenue. Both the Museum

Library and that of the Asiatic Society require additional space, not only for present requirements, but to allow for future development."

Resolved,—That the Honorary Secretary do address the Government, as suggested.

9. On a motion proposed by Mr. J. A. Henderson, and seconded by Dr. W. H. de Silva, the following gentlemen were elected as Office-Bearers for 1898 :—

President.—The Right Rev. the Lord Bishop of Colombo.

Vice-Presidents.—The Hon. Mr. Justice A. C. Lawrie and Mr. Staniforth Green.

Council.

Mr. O. Collett, F.R.M.S.
Mr. P. Coomáraswámy.
Mr. J. Ferguson.
Mr. C. M. Fernando, B.A., LL.B. Cantab.
Mr. P. Freüdenberg.
Mr. A. Haly.
Mr. F. M. Mackwood.
Mr. F. H. Modder.
Mr. P. Rámanáthan, C.M.G.
Mr. W. P. Ranasinha.
Mr. E. S. W. Senáthi Rájá.
Dr. W. G. Vandort.

Honorary Treasurer.—Mr. F. C. Roles.

Honorary Secretaries.—Mr. H. C. P. Bell, C.C.S.; Mr. J. Harward, M.A.; and Mr. G. A. Joseph.

10. The CHAIRMAN explained that owing to ill-health Mr. Harward had resigned the Honorary Secretaryship; but the Council had prevailed on him to retain it on the understanding that he was not expected to read Papers. The only new Member of Council was Mr. Modder, who took an enthusiastic interest in that part of the Island (Kurunégala) in which he lived, and had been a valuable contributor to the Society's proceedings.

11. The CHAIRMAN :—I beg to move, on the recommendation of the Council, that Mr. H. C. P. Bell, the Archæological Commissioner, be elected an Honorary Member in recognition of the valuable services rendered by him to the Society during a period of seventeen years.

I think it is right I should move this from the Chair (*hear, hear*), and ask you to adopt the suggestion of the Council, and adopt it, I hope, cordially and unanimously (*hear, hear*). Mr. Bell's services to the antiquities and archæology of Ceylon are well known to all of us; there is no man who has done so much continuously and usefully as he has done in that direction. His ability to do the work was recognized long ago by the Government in selecting him from the ranks of the Civil Service as the man most capable of undertaking the direction of the Archæological Survey of the Island; and the zeal with which he has carried those works on, the ability and knowledge he has applied to them, have been recognized by all. The Council have felt it fitting that what he has done should be recognized by the Society in this small manner,—for it is a small way, but that is the only way we have at our command,—viz., by recommending that he be made an Honorary Member of this Society for the remainder of his life (*hear, hear*).

12. Mr. P. FREUDENBERG :—I have much pleasure in seconding the motion. Much praise has been bestowed upon Mr. Bell, so I shall not praise him myself. I desire to congratulate him on his success in what

to him, we know, is a work of love, and which has properly singled him out, not only for the recognition of men of Science, but also for the admiration of those who, like myself, are glad to listen to words of thought. I trust that it may be for long years Mr. Bell's lot to be able to devote himself to his favourite task with undiminished vigour of mind and body, and that this Society will long continue to be proud of him as one of its ablest Members (*hear, hear*).

13. Mr. C. M. Fernando said he did not wish to give a silent vote because he had the misfortune to differ from Mr. Bell on a very little minor point of detail. It was a very little minor point, regarding the nationality of the artists who painted certain frescoes at Sígiriya about fourteen hundred years ago. As a Member of the Society he wished to state publicly that there was no one who appreciated Mr. Bell's services more than he did. The Society had done what was only fitting in recognizing in some small measure Mr. Bell's services. Mr. Bell was a very modest man; but that should not prevent them from showing their appreciation of his eminent and heartily rendered services.

The motion was carried with acclamation, and the Meeting terminated.

14. A vote of thanks to the Chair, proposed by Mr. A. Haly, seconded by Mr. Cochran.

COUNCIL MEETING.

Colombo Museum, April 1, 1898.

Present:

The Lord Bishop of Colombo, President, in the Chair.

The Hon. Mr. Justice A. C. Lawrie, Vice-President.

Mr. P. Coomáraswámy.	Mr. F. M. Mackwood.
Mr. J. Ferguson.	Mr. E. S. W. Senáthi Rájá.
Mr. A. Haly.	Dr. W. G. Vandort.

Mr. G. A. Joseph, Honorary Secretary.

Business.

1. Read and confirmed Minutes of Council Meeting held on February 5, 1898.

2. Resolved,—That the following Candidates for admission into the Society as Resident Members be elected:—

P. E. Morgappah:	nominated by	P. Coomáraswámy. H. Tiruvilingam.
H. Freüdenberg:	do.	P. Freüdenberg. F. M. Mackwood.
J. Pieris:	do.	G. A. Joseph. W. A. de Silva.

3. Read letter dated March 5, 1898, from the Hon. the Colonial Secretary regarding inadequate accommodation for the Library, and also the Honorary Secretary's letter inviting the attention of the Government to the matter.

4. Read a letter from Mr. H. C. P. Bell, C.C.S., tendering his thanks for the honour done him by his election as Honorary Member of the Society.

5. Laid on the table a Paper by Mr. O. Collett, F.R.M.S., being No. 2 of the series on "Contributions to Ceylon Malacology," entitled "Description of a new *Helicoid* Land Shell from the Southern Province."

On the approval and recommendation of Dr. W. G. Vandort and Mr. A. Haly,—

Resolved,—To accept the Paper for reading at a Meeting of the Society.

6. Laid on the table a letter from the Director of the Missouri Botanical Garden, forwarding a copy of the Eighth Annual Report, and requesting an exchange of publications.

Resolved,—That the Director of the Missouri Botanical Garden be thanked for his letter and copy of the Eighth Annual Report, but that he be informed that in view of the large number of Institutions already on the exchange list, the Council have decided to limit the number of exchanges, and so regret that they cannot see their way to exchange. Decided further to forward the publication and the letter to the Superintendent of the School of Agriculture.

7. Resolved,—That the selection of a Clerk to succeed Mr. H. M. Gunasekera be left in the hands of the Honorary Treasurer and the Honorary Secretaries, and that they do engage a man provisionally on probation pending confirmation by the Council.

8. Laid on the table a letter from Mr. F. H. de Vos asking that some person may be employed "to make copies of the Dutch Epitaphs and Sketches of the Arms" in the Pettah Burial Grounds, to illustrate a Paper that he is preparing for the Society.

Mr. J. Ferguson informed the Council that Mr. Foenander, late of the Survey Department, would probably be able to do the work required by Mr. de Vos.

Resolved,—That the Honorary Secretary do write to Mr. Foenander on the subject, and that Mr. de Vos be requested to visit the Pettah Burial Ground and select such tombstones as he wishes reproduced.

9. Laid on the table a letter from Mr. J. P. Lewis forwarding "Notes on some of the Papers published in the Journal for 1896," and suggesting that they be printed in the Journal as an adjunct to the Papers and Speeches.

Resolved,—That Mr. J. P. Lewis be thanked for his suggestion and for forwarding the "Notes," but that he be informed that under the regulations guiding the Council in this matter the "Notes" are inadmissible, and cannot therefore be accepted.

10. Laid on the table an application from the Archæological Commissioner for the sum of Rs. 61·24, being actual travelling expenses incurred in proceeding to Colombo to be present at the Meeting of the Society at which his "Interim Report" on Sígiriya (1897) was read.

Resolved,—That the Archæological Commissioner be informed that the Council regret their inability to comply with his request, as it will establish a precedent to similar claims.

11. Considered the advisability of translating a Manuscript by Cornelis Taay Wezel, dated 1713, containing an account and description of the peculiarities, nature, and breeding of elephants in Ceylon, with an account of how they are tracked, caught, stalled, tamed, sold, &c.

Mr. Joseph stated that Mr. F. H. de Vos considered that the Manuscript was of value, and worthy of translation for the Society.

Resolved,—That the Manuscript be forwarded to Mr. de Vos, and that he be asked to prepare a Paper from it, and to submit it to the Council for consideration ; on the understanding that the Paper do contain additional matter to that already published regarding Ceylon elephants.

12. Resolved,—That the matter of fixing a date and business of the next General Meeting do stand over for decision at the next Council Meeting.

COUNCIL MEETING.

Colombo Museum, May 18, 1898.

Present :

The Lord Bishop of Colombo, President, in the Chair.
Mr. Staniforth Green, Vice-President.

Mr. J. Ferguson. | Dr. W. G. Vandort.
Mr. F. C. Roles, Honorary Treasurer.
Mr. G. A. Joseph, Honorary Secretary.

Business.

1. Read and confirmed Minutes of Council Meeting held on April 1, 1898.

2. Read the following letter and annexures from the Archæological Commissioner, refunding a balance of Re. 1·33 out of the sum of Rs. 709·57 placed at his disposal from the Anuradhapura Excavation Fund and spent on the restoration of the "Buddhist Railing":—

THE ARCHÆOLOGICAL COMMISSIONER TO THE HONORARY SECRETARY, R.A.S. (C.B.).

Buddhist Railing.

No. 279. Sígiriya, April 16, 1898.

SIR,—IN connection with this long standing matter* I have the honour to annex for the information of the Council copy of a letter,

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* See Journal C.A.S., vol. XII., 1891, p. 31; vol. XIII., 1893, pp. 13–17. No money was made available by the Society until September, 1894. Under Government sanction the work was carried out successively by Messrs. Tocke and Goodman of the Public Works Department, in consultation with the Archæological Commissioner.

No. 76, just received from Mr. G. S. Goodman, late District Engineer, Anuradhapura, and of my reply thereto, No. 229 of March 22, 1898.

(2) The balance due to the Society (which may be credited to its general income) has since been remitted, and a draft in favour of the Honorary Treasurer, Royal Asiatic Society (Ceylon Branch), accompanies this letter.

(3) Mr. A. R. Tocke, now District Engineer, Badulla, has still to render account of his share of the work.*

(4) There has been inordinate delay in finishing the work on the part of the Public Works Department Officers concerned ; but the money has been well spent.†

I am, &c.,
H. C. P. BELL,
Archæological Commissioner

THE ANURADHAPURA EXCAVATION FUND.

Restoration of the "Buddhist Railing."

	Received by :—		Rs.	c.
September 29, 1894	... A. R. Tocke	...	300	0
March 4, 1895	... do.	...	250	0‡
October 31, 1896	... G. S. Goodman	...	159	57
	Total	...	709	57

	Expended by :—		Rs.	c.
June, 1894	... A. R. Tocke	...	190	92
July, 1894	... do.	...	108	58
October, 1895	... do.	...	42	90
November, 1895	... do.	...	36	90
August, 1896	... G. S. Goodman	...	80	38
September, 1896	... do.	...	70	50
February, 1897	... do.	...	86	87
March, 1897	... do.	...	49	20
March, 1897	... do.	...	22	98
April, 1897	... do.	...	19	1
			708	24
	Balance	...	1	33
	Total	...	709	57

H. C. P. BELL,
Archæological Commissioner.

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* Since received and forwarded. † See Plate.
‡ September 17, 1896, transferred to G. S. Goodman, Rs. 170·70.

To face p. 148.]

"BUDDHIST RAILING": ANURÁDHAPURA.

[Arch. Survey photo.

BRITISH MUSEUM
NATURAL HISTORY

The DISTRICT ENGINEER, Badulla, to the ARCHÆOLOGICAL COMMISSIONER.

Buddhist Railing.

No. 381. April 7, 1898.

SIR,—REFERRING to your letter No. 230 of the 22nd instant, I have the honour to forward herewith the statement asked for.

I am, &c.,
A. R. TOCKE,
District Engineer.

		Rs.	c.
Expended in June, 1894 ...	...	190	92
Do. July, 1894 ...	...	108	58
Do. October, 1895	...	42	90
Do. November, 1895	...	36	90
Total	...	379	30
Received by cheques ...	...	550	0
Expended as above ...	...	379	30
Unexpended balance remitted by cheque	...	170	70

Summary of Work done.

(1) Removing and clearing foundations; collecting and arranging stones.

(2) Building up foundations to plinth and filling in brick-backing.

From Mr. G. S. GOODMAN to the ARCHÆOLOGICAL COMMISSIONER.

No. 76. *Buddhist Railing.*

SIR,—I HAVE the honour to forward herewith a statement of expenditure upon the above work, which has, I believe, been completed to your satisfaction.

		Rs.	c.
Expended in August, 1896 ...	...	80	38
Do. September, 1896	...	70	50
Do. February, 1897	...	86	87
Do. March, 1897 ...	...	49	20
Do. do. ...	...	22	98
Do. April, 1897 ...	...	19	1
Total	...	328	94
Received cheque ...	...	170	70
Do. ...	...	159	57
		330	27
Expended as above ...	...	328	94
Balance	...	1	33

Summary of Work.

Two "sections" completed and carved stones placed in position with packing.

I am, &c.,
G. S. GOODMAN.

P.S.—To-day Rs. 30 was drawn by me for supervision of the work, according to agreement.

Resolved,—That the Council, by its Resolution of March 28, 1893, having placed the balance of the Excavation Fund in the hands of the Archæological Commissioner (as recommended by Dr. W. R. Kynsey, the remaining Member of the Special Committee), do not wish to have any further connection with the matter.

3. Read letter No. 259 of April 7, 1898, from the Archæological Commissioner regarding actual expenses incurred by him in travelling from Anuradhapura to Colombo in order to attend the last General Meeting of the Society.

4. Laid on the table a Paper by Mr. F. H. de Vos regarding Cornelis Taay Van Wesel's (manuscript) account of "Elephants in Ceylon."

Resolved,—That the Paper be referred to Dr. W. G. Vandort for his opinion.

5. Laid on the table a letter from the Hon. the Colonial Secretary, dated April 2, 1898, forwarding a letter from the Premier of Victoria, soliciting information touching the custom of Polyandry in Ceylon.

Resolved,—That any information on the subject contained in the Society's records be furnished; but that the Government be informed that the Council is of opinion that the Officers of Government are better qualified than this Society to supply the required information.

6. Laid on the table Paper on "Don Jeronimo de Azevedo, Governor of Ceylon, 1594–1611," by Mr. A. E. Buultjens, revised by Messrs. F. H. de Vos and B. Wennink.

Resolved,—That the Paper be accepted, and that the author be requested to edit it for reading and publication.

7. Laid on the table a Paper by Mr. F. H. de Vos on "The Monumental Remains of the Dutch East India Company in Ceylon."

Resolved,—That the thanks of the Council be conveyed to Mr. F. H. de Vos for forwarding the Paper, and that it be accepted; but that Mr. de Vos be informed that in printing the Paper the Society cannot undertake the expense of reproducing the illustrations: should, however, Mr. de Vos wish to have the Paper published in full as it stands, the Council will recommend it to Government; and further recommend that the Society do vote a sum of money in aid of the publication of the work.

8. The Honorary Secretary informed the Council that Mr. F. D. Jayasinha has been engaged as the Society's Clerk, on probation.

9. Resolved,—That a General Meeting be held in June, if possible, and that the 25th of that month be named provisionally; but that the date for the Meeting be finally fixed by the Secretaries in consultation with the President.

GENERAL MEETING.

Colombo Museum, June 25, 1898.

Present:

Mr. Staniforth Green, Vice-President, in the Chair.

J. E. Addyman. | A. Haly.

P. E. Morgappah.

G. A. Joseph, Honorary Secretary.

Visitors: 14 gentlemen.

Business.

1. Read and confirmed Minutes of Annual General Meeting held on February 26, 1898.

2. Read following correspondence regarding inadequate accommodation for the Library:—

THE HONORARY SECRETARY, C.B.R.A.S., to the Hon. the COLONIAL SECRETARY.

No. 35. Colombo, February 27, 1898.

SIR,—AT the Annual General Meeting of the Society held on the 26th instant, under the presidency of the Hon. Mr. Justice Lawrie, Vice-President, it was unanimously resolved to direct the attention of the Government to that portion of the Annual Report referring to inadequate accommodation for the Library.

2. I beg accordingly to forward to you a printed copy of the Annual Report, and to direct the special attention of the Government to the Council's remarks in regard to the need of more room for the Library (*vide* page 3 of Report, portion marked in red ink).

I am, &c.,

G. A. JOSEPH,
Honorary Secretary.

Portion of Report referred to.

* * * * *

The Council desire to draw the attention of the Government to the remarks made in previous Annual Reports regarding inadequate accommodation. The need of sufficient room for books has been much felt for some years now—a need which Government has admitted. An extension of the building will alone meet the emergency, and it is hoped the long-deferred extension will be shortly undertaken.

The Committee of the Colombo Museum, recognizing the congestion now apparent everywhere in the Library, recommended the extension of the eastern wing of the Museum, and a sum of Rs. 40,000 was voted for the purpose in 1891, but owing to some disagreement as regards the particular plan of extension to be adopted the money was allowed to lapse to revenue. Both the Museum Library and that of the Asiatic Society require additional space, not only for present requirements, but to allow for future development.

* * * * *

The Hon. the COLONIAL SECRETARY to the HONORARY SECRETARY, C.B.R.A.S.

March 5, 1898.

SIR,—I AM directed to acknowledge the receipt of your letter No. 35 of February 27, referring to the inadequate accommodation for the Library, and to state that the matter will receive consideration.

I am, &c.,
H. WHITE,
for Colonial Secretary.

3. The Honorary Secretary announced the election of the following Members since the last Meeting :—

(1) P. E. Morgappah.
(2) H. Freüdenberg.
(3) J. Pieris, Barrister-at-Law.

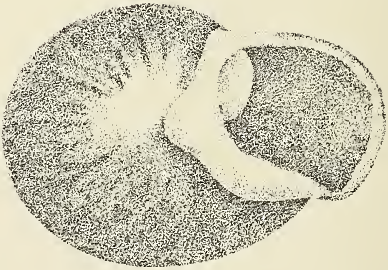
4. Laid on the table Journal for 1897, Vol. XV., No. 48.

5. Mr. Joseph read the following Paper :—

BRITISH MUSEUM
NATURAL HISTORY

A.

A.



B.

Egg.

Acavus Poleii *Collett.*

Figures A A are slightly reduced. Figure B is exact natural size

Lith. S.G.O. N° 70/98

CONTRIBUTIONS TO CEYLON MALACOLOGY.

(2) Description of a new Helicoid Land Shell from the Southern Province.

By O. Collett, F.R.M.S., Cor. Member of the Malacological Society of London, &c.

Acavus (*Oligospira*) *poleii*, *n. sp.*

Shell large, imperforate, depressed, globose, oblong, solid. Of a general pinkish-brown colour all over, encircled by two or more narrow chocolate bands; the whole upper surface dotted over with irregular golden speckles.

Spire flattened, slightly elevated; apex very obtuse. Whorls $3\frac{1}{2}$, convex, and rapidly increasing; suture impressed. The last whorl inflated, descending in front, striated by lines of growth, and crossed by obsolete transverse encircling ridges, which give a roughened appearance to the shell. The back of the reflected lip is yellowish-white. Aperture oblique, oblong, bluish-white, and shiny within. Peristome white, polished, expanded, and reflexed. Columella thickened, dilated, and slightly incurved; joined to the outer lip by a broad callus which covers the umbilical region. Entire peristome, columella, and callus pure milk-white. Base rose-colour, swollen, and rounded.

Diameter: major 52 mm., minor 36 mm., altitude 26 mm.

Habitat: "On decaying logs in forest swamps in the Udagama district, Southern Province."—Pole.

A collection of land shells sent to me for examination by Mr. E. Ernest Green contained a single specimen of the above species labelled "Udagama." I learned that the shell had been given to my friend by Mr. J. Pole, who was formerly stationed in that district. I accordingly despatched a native collector to the jungles of Udagama to try to secure further specimens for the purpose of comparison. He

returned with several full-grown examples (alive), also some ova and embryonic shells. Altogether a fairly complete series has been examined.

For information relating to habitat, &c., I am indebted to Mr. John Pole, in whose honour this species has been named.

Acavus (*poleii*) strongly recalls *A. waltoni* (Reeve), to which it is closely allied. It is readily distinguished however by its somewhat narrower and more solid shell, its much paler colour, and especially by its pure white peristome. The last feature is as constant as the very dark brown or black peristome of *A. waltoni*, the species which abounds in our hill districts.

The animals of the two species present marked differences in colouration and appearance, as follows :—

Acavus (*poleii*).—Animal mouse-colour; head and tentacles dark brown ; foot-sole pale brown, with purple marginal fringe. Egg (largest specimen) 25 mm. long, 16 mm. broad.

Acavus waltoni.—Animal dark inky-blue ; tentacles deep bluish-gray; foot-sole dirty white, with fringe of pale indigo. Egg (largest specimen) 22 mm. long, 13 mm. broad.

Distribution.—*Acavus* (*poleii*) appears to be restricted to the forests of the Southern Province, where neither of the other allied species of the genus are known to occur.

The distribution of the recorded species of *Oligospira* * appear to be as follows :—

Acavus (*Oligospira*) *skinneri* (Reeve).—Pattipola, Province of Uva, 5,000 ft. (Haly).

Acavus (——) *waltoni* (Reeve).—Common throughout the Central Province, 2,000–4,000 ft.

Acavus (——) (*poleii*, *n. sp*).—Udagama, Southern Province, 500 ft. (Pole).

6. The following Paper was then read by its author :—

* In 1894 Jousseaume proposed to separate the flattened species from the more turbinate forms of *Acavus* by the creation of a subgenus *Acavella.* (Mémoires de la Société Zoologique de France, 1894, p. 288.) But Ancey had already introduced *Oligospira* in the Conchologists' Exchange (II., p. 22, 1887), and as the latter term has been accepted by Pilsbry (Manual of Conchology, Series II., Vol. VI., p. 82) it has been adopted here.

AIDS TO THE IDENTIFICATION OF CEYLON BIRDS.

Part I.—Introduction and Key to the Passeres.

By A. HALY, Director of the Colombo Museum.

[NOTE.—The titles of the following works are abbreviated thus :—

Legge.—Legge, W.V.: A History of the Birds of Ceylon, 2 vols., London, 1880.

Catalogue.—Catalogue of the Birds in the British Museum, by various Authors, 1874 to 1894.

Fauna.—Fauna of British India, Oates and Blanford, 4 vols., 1889 to 1898.

Dictionary.—A Dictionary of Birds, by Newton, Gadow, and others, 1896.—A. H.]

THE following list of Birds recorded from Ceylon is compiled from the "Fauna of British India, Birds."

My first object has been to make the identification of our Ceylon birds as easy as possible for the student.

No one needs to be told that he has an eagle or an owl, a parrot or a pigeon, before him. If he wishes, however, to define the genera or sub-families or families under which his specimen is classed, he will find himself plunged in difficulties, which it is partly the object of the following pages to point out.

As a matter of fact I believe that in a limited Fauna like our own, the measurements and colours will be found sufficient for the identification of any of the species.

The names of the species are those of the Fauna. After the name one or more figures are inserted in brackets, which refer to the paragraphs of the key which precedes each order.

These keys are compiled from the Fauna, and are so arranged that the characters of any species can be read continuously from the more to the less general. By means of two extra columns of figures the paragraphs can be referred

to both backwards and forwards; thus, if the bird before the student has less than ten tail feathers the number opposite that character (293) will guide him to nine feathers without reading all the key between. In the same way, opposite nine feathers in the tail is a number (4) which carries back the reader to ten feathers.

Only those parts of the keys in the Fauna have been selected that more immediately define and contrast Ceylon species, otherwise it would have been greatly extended.

Two references follow the name, one to Legge the next to the British Museum Catalogue. Legge's English name is given as the one probably the most convenient for Ceylon students. Then follows the geographical distribution, next the local, both condensed as much as possible.

As regards the descriptions, I have been careful to compare all the species represented in the Museum collection with the Fauna, and have endeavoured to bring out all the salient points in the clearest manner. Full descriptions of the colours of the plumage are often of great length, and in many cases, as in the larks and the pipits, almost useless.

My second object has been to give more information about the geographical distribution of the allied species than is given either by Legge or the Fauna. Thus, under each genus, I have referred to the British Museum Catalogue and under the families to Wallace's Geographical Distribution.

I have carefully avoided all allusions to the habits of the birds or to their nidification and other matters of that sort. If the serious study of our birds is to be entered upon the Fauna must be procured, and should be supplemented by Legge.

Thirdly, I have taken the opportunity to call attention to the historical side of the subject. This of course has been mainly taken from the Dictionary.

Under the higher divisions will be found additional remarks on the distribution, and as a rule other characters than those in the key, with the opinions of a few of the principal authorities on their value.

Class Aves.—Birds, whether living or extinct, stand out sharply defined from the rest of the animal kingdom by the possession of feathers. They are descended from some group of reptiles to which in many respects they are closely allied. So far, the leading authorities seem to be agreed. Another point that seems at present tolerably certain, is that the extinct *Archæopteryx* with its toothed jaws and long bony tail forms a group by itself. According to Huxley, 1867, this bird constituted an order, to which two others were to be added, the birds with a keeless breast bone and those with a keeled.

Thus we get three orders : the *Saururæ* represented by the *Archæopteryx*, the *Ratitæ* by the *Ostriches* and their allies. and the *Carinatæ*, which include all our other existing birds.

In 1880 Professor Marsh published the results of his famous discoveries in fossil birds, and gave it as his opinion that the *Ratitæ* are survivors of the original stem which branched off from the Reptilian type.

In 1888 Professor Feurbringer proposed two sub-classes : the first *Saururæ* containing the *Archæopteryx*, the second *Ornithuræ* all other birds, the *Ratitæ* being regarded as descendants of *Carinate* birds that have lost their powers of flight.

Mr. Oates in the Fauna will have nothing to do with the *Carinatæ*, and divides existing birds simply into orders.

We are here confronted with fundamental differences of opinion so profound that all the student can do is to wait further developments.

Order I. : *Passeres.*—This order contains as many species as all the rest of the class put together. According to Professor Feurbringer they are a group of Cretaceous age which arose in the Oriental region, where the least modified forms, the *Eurylæmidæ*, still exist. He considers them equivalent to a family with four sub-families.

The definition of the order, as will be seen by the key, is purely anatomical ; but if we include the *Eurylæmi*, which are very closely allied, the following external

characters may be considered diagnostic. The hallux forms a separably movable hind toe, and the greater wing coverts are in a single row not extending beyond the secondaries. The hind claw is the largest, and Sir Richard Owen gave as a character of his Insessores "the two external toes united at the base."

ORDER I.—PASSERES.

The deep plantar tendons passerine ; palate ægithognathous.

1 ...	Intrinsic muscles of the syrinx fixed to the ends of the bronchial semi-rings ...	Acromyodi	... 361
2 ...	The edges of both mandibles perfectly smooth, except for the presence of a single notch in many species ...	—	... 333
3 ...	The hinder part of the tarsus longitudinally bilaminated ; the laminæ entire and smooth	—	... 323
4 ...	Wings with ten primaries, the first notably small ...	—	... 293
5 ...	Nostrils always clear of the line of the forehead; space between nostril and edge of mandible less than space between nostril and culmen	—	... 272
6 ...	Plumage of the nestling resembling that of the adult female, but paler ...	—	... 95
7 ...	Nostrils completely covered by feathers and bristles ...	Corvidæ	... 18
8 ...	First primary much exceeding half the length of second ; plumage more or less glossy and firm ; length of the bill considerably more than its depth	Corvinæ	... 15
9 ...	Nostrils distant from the forehead about one-third length of bill ; nasal bristles rigid and straight reaching to about the middle of the bill ; rictal bristles and feathers on front of face altogether absent ; tail much shorter than wing ...	Corvus	... 12

11 ...	10 ...	Hind neck black like crown...	1	C. macrorhynchus	
	11 ...	Hind neck gray or ashy ...	2	C. splendens	
9 ...	12 ...	Nostrils distant from forehead less than quarter length of bill; nasal bristles or plumes short, never reaching to middle of bill ...			
	13 ...	Eyelids wattled ...		Cissa	
	14 ...	Head and neck chestnut ...	3	C. ornata	
8 ...	15 ...	First primary never exceeding half length of second, and usually much less; plumage firm; length of bill considerably more than its depth		Parinæ	
	16 ...	Head not crested; tail rounded		Parus	
	17 ...	Lower plumage white; back and rump ashy-gray ...	4	P. atriceps	
7 ...	18 ...	Nostrils bare or merely overhung by a few hairs, or plumelets; rictal bristles always present with twelve tail feathers ...		— ...	85
	19 ...	Inner and hind toe equal ...		Crateropodidæ ...	83
	20 ...	Sexes alike; gregarious; extremely noisy; legs and feet large; wings short and rounded; habits partly terrestrial, partly arboreal; eggs generally blue or white, unspotted ...		Crateropodinæ...	28
	21 ...	Bill shorter than head, stout, not strikingly curved ...		Crateropus ...	26
	22 ...	Throat and breast dark brown or black with ashy margins		— ...	25
	23 ...	Tail ashy and brown; primaries edged paler ...	5	C. striatus	
	24 ...	Tail rufous; primaries without paler edges ...	6	C. rufescens	
22 ...	25 ...	Throat faint rufous; breast dark rufous ...	7	C. cinereifrons	
21 ...	26 ...	Bill as long or longer than head; slender and much curved		Pomatorhinus	
	27 ...	A white supercilium; sides of neck rufescent, matching upper plumage ...	8	P. melanurus	
20 ...	28 ...	Sexes alike; solitary or in small troops; not noisy; legs and feet strong; wing short and rounded; habits skulking in bushes or on the ground; eggs generally spotted		Timeliinæ ...	39
	29 ...	Tail much shorter than wing		— ...	34

	30 ...	Shafts of crown feathers rigid and glistening ...		Dumetia ...	32
	31 ...	Chin and throat white ...	9	D. albigularis	
30 ...	32 ...	Shafts of crown feathers soft, not separable from webs ...		Pyctorhis	
	33 ...	Bill black; forehead pale rufous	10	P. nasalis	
29 ...	34 ...	Tail equal to or shorter than wing, but always longer than half ...			
	35 ...	Bill stout, straight; base of culmen straight; when closed deepest at middle ...		Pellorneum ...	37
	36 ...	Mantle not streaked ...	11	P. fuscicapillum	
35 ...	37 ...	Bill stout, curved; culmen regularly curved; deepest at nostrils ...		Rhopocichla	
	38 ...	Forehead and ear coverts black	12	R. nigrifrons	
28 ...	39 ...	Sexes usually dissimilar; solitary; tarsus long and smooth usually; wing rounded, short; habits terrestrial; eggs usually spotted		Brachypteryginæ	47
	40 ...	Tail much longer than tarsus			
	41 ...	Tail but little graduated or nearly square; outer feathers falling short of tip of tail by less than half the length of tarsus		— ...	41
	42 ...	Tail not less than twice the length of tarsus ...			
	43 ...	Second primary equal to or exceeding the longest secondaries ...		Larvivora ...	45
	44 ...	Upper plumage blue, lower bright chestnut ...	13	L. brunnea	
43 ...	45 ...	Second primary much shorter than the longest secondaries		Arrenga	
			14	A. Blighi (only one species)	
41 ...	46 ...	Tail greatly graduated; outer feathers falling short of tip by as much as length of tarsus		Elaphrornis	
			15	E. Palliseri (only one species)	
39 ...	47 ...	Sexes alike; solitary or occurring in small troops; not noisy; habits entirely arboreal; never descending to the ground; eggs usually spotted		Sibiinæ ...	54

	48 ...	Tail and wing about equal; tail square; bill slender, gently curved; mandibles equal; first primary extremely minute ...		Zosterops	
	49 ...	Chin and throat yellow; abdomen gray ...			
	50 ...	Upper plumage golden yellow			
	51 ...	Abdomen entirely gray ...	16	Z. palpebrosa	
	52 ...	Upper plumage olive green ...			
	53 ...	Yellow on chin and throat; tinged with green and extending to the breast ...	17	Z. ceylonensis	
47 ...	54 ...	Sexes invariably dissimilar; solitary or occurring in small troops; colour brilliant; arboreal; eggs usually spotted		Liotrichinæ	
	55 ...	First primary about half the length of second ...			
	56 ...	Tail considerably shorter than wing			
	57 ...	Secondaries falling short of wing by a distance not greater than half the length of tarsus		— ...	63
	58 ...	Tarsus longer than middle toe with claw ...		Ægithina ...	60
	59 ...	Tail uniform; upper plumage greenish yellow, or black, or mixed	18	Æ. tiphia	
58 ...	60 ...	Tarsus shorter than middle toe with claw ...		Chloropsis	
	61 ...	Forehead rich orange yellow	19	C. malabarica	
	62 ...	Forehead greenish or yellowish	20	C. jerdonii	
57 ...	63 ...	Secondaries falling short of wing by a distance equal to length of tarsus ...		Irena	
			21	I. puella (only one species)	
54 ...	64 ...	Sexes alike; solitary or in small troops; arboreal; tarsi very short, never exceeding length of middle toe; wing rounded and moderately long; nape usually with some hairs; eggs spotted...		Brachypodinæ	
	65 ...	Hairs on hind neck few, or short, or none ...			
	66 ...	Feathers on side of crown and ear coverts similar to those on crown ...		— ...	76
	67 ...	A distinct crest ...		— ...	74
	68 ...	Nostrils not covered by plumelets ...			

	69 ...	Wing pointed; secondaries falling short of tip of wing by length of tarsus or more		— ...	72
	70 ...	Tail forked ...		Hypsipetes	
	71 ...	No cheek stripe or black patch under ear coverts ...	22	H. ganeesa	
69 ...	72 ...	Wing blunt; secondaries falling short of the wing by much less than length of tarsus		Molpastes	
	73 ...	Under tail coverts red ...	23	M. hæmorrhous	
67 ...	74 ...	Crest inconspicuous or absent			
	75 ...	Upper tail coverts not reaching the middle of the tail...			
66 ...	76 ...	Feathers of forehead and crown slightly lengthened and softened ...		— ...	82
	77 ...	Bill three quarters length of head; culmen laterally compressed and sharply carinated		Iole ...	79
	78 ...	Crown and upper plumage uniform; lower plumage bright yellow ...	24	I. icterica	
77 ...	79 ...	Bill smaller, about half of head; culmen not much compressed or carinated ...		Pycnonotus	
	80 ...	Throat yellow	25	P. melanicterus	
	81 ...	Throat brown or gray ...	26	P. luteolus	
76 ...	82 ...	Feathers at sides of crown and over ear coverts long and pointed ...		Kelaartia	
			27	K. penicillata (only one species)	
19 ...	83 ...	Inner and hind toe very unequal		Sittidæ Sitta (only one genus)	
	84 ...	Uniform purplish blue; above forehead black ...	28	S. frontatis	
18 ...	85 ...	With ten rectrices ...		Dicruridæ	
	86 ...	Outer tail feathers not exceeding middle ones by length of wing ...		— ...	94
	87 ...	Forehead not tufted ...		Dicrurus ...	93
	88 ...	Entire plumage deep glossy; black in the adult ...	29	D. ater	
	89 ...	Upper plumage deep indigo, below uniform gray ...	30	D. longicaudatus	
	90 ...	Below partially white ...			
	91 ...	Throat and breast gray ...	31	D. cærulescens	
	92 ...	Throat and breast dark brown	32	D. leucopygialis	
87 ...	93 ...	Forehead tufted ...		Dissemurulus	
			33	D. lophorhinus (only one species)	

86 ...	94 ...	Outer tail feathers greatly lengthened ; exceeding the middle ones by twice or three times the length of wing...		Dissemurus	
			34	D. paradiseus (only one species)	
6 ...	95 ...	Plumage of nestling resembling adult female, but brighter		Sylviidæ	... 144
	96 ...	Twelve tail feathers ...		—	... 131
	97 ...	Feathers on forehead short, rounded ; shafts not elongate ; only the ordinary rictal bristles near gape ...		—	... 121
	98 ...	Rictal bristles in a horizontal row			
	99 ...	Feathers of neck soft ...			
	100 ...	First primary much less than a third of second ...		—	... 107
	101 ...	Wing and tail about equal ...		—	... 120
	102 ...	Rictal bristles very small ; tail much graduated ; outer feathers less than three quarters length of tail ...		Locustella	... 104
	103 ...	Tail feathers broadly tipped with white ...	35	L. certhiola	
102 ...	104 ...	Rictal bristles strong, well developed ; tail less graduated ; the outer feathers more than three quarters the length of tail ...		Acrocephalus	
	105 ...	Large ; wing about 3 in. ...	36	A. stentoreus	
	106 ...	Small ; wing under 2·5 in. ...	37	A. dumetorum	
100 ...	107 ...	First primary longer than a third of second ; most frequently equal to or exceeding the half ...			
	108 ...	Rictal bristles well developed			
	109 ...	Bill as long as or longer than head		Orthotomus	... 111
	110 ...	Upper plumage yellowish green	38	O. sutorius	
109 ...	111 ...	Bill shorter than head ...			
	112 ...	First primary shorter than half the second ...		—	... 115
	113 ...	Wing rounded ...		Cisticola	
	114 ...	Lateral tail feathers with white tips ...	39	C. cursitans	
112 ...	115 ...	First primary longer than half the second ...			
	116 ...	Third primary falling short of wing by a considerable distance ...			
	117 ...	Two rictal bristles on each side of head ...		Franklinia	

	118 ...	Forehead and crown of the same colour ...	40	F. gracilis
	119 ...	Third primary reaching to tip of wing ...		
101 ...	120 ...	Tail equal to wing ...		Schænicola
			41	Schænicola platyura (one Indian species)
97 ...	121 ...	Feathers of forehead disintegrated; the shafts lengthened; some supplementary bristles frequently long and numerous in front of rictal bristles ...		
	122 ...	Tail nearly even or slightly forked		
	123 ...	Supplementary bristles very short; no hair over nostrils		Sylvia ... 126
	124 ...	First primary large, extending considerably beyond tips of primary coverts ...		
	125 ...	Crown of head gray; wing under 3 in. ...	42	S. affinis
123 ...	126 ...	Supplementary bristles very strong and numerous, extending up to the culmen and lying over the nostrils		Acanthopneuste
	127 ...	With no band on crown of head		
	128 ...	Length of second primary between that of sixth and eighth		
	129 ...	Lively green above; bright yellow below ...	43	A. nitidus
	130 ...	Dark green above; greyish yellow below ...	44	A. magnirostris
96 ...	131 ...	Tail of ten feathers ...		
	132 ...	Tail varies in length according to season, cross rayed graduated ...		Prinia
	133 ...	Upper plumage not streaked		
	134 ...	Abdomen fulvous or buff ...		
	135 ...	Bill intensely black ...		
	136 ...	Upper plumage dark ashy ...	45	Psocialis (summer)
	137 ...	Upper plumage rufous brown	45	Psocialis (winter)
	138 ...	Upper plumage earthy brown		
	139 ...	Outer tail feathers white; wing about 2·5 in. ...	46	Psylvatica (summer)
	140 ...	Outer tail feathers pale brown, about 2 in. ...	47	P. jerdoni (summer)
	141 ...	Bill brown; lower mandible very pale or flesh coloured		
	142 ...	Upper plumage crown rufous brown; wing about 2·5 in.	46	P. sylvatica (winter)
	143 ...	Upper plumage earth brown, tinged with fulvous or green	47	P. jerdoni (winter)

95 ...	144 ...	Plumage of nestling cross-barred		Laniidæ	... 178
	145 ...	Wing when folded not reaching beyond middle of tail; first primary not shorter than tarsus; second primary falling short of tip of wing		Laniinæ	... 176
	146 ...	Shafts of rump feathers soft		—	... 157
	147 ...	Head not crested ...			
	148 ...	Tail feathers well graduated		—	... 155
	149 ...	Bill deep and compressed; margin of upper mandible near tip strongly notched and toothed ...		Lanius	... 152
	150 ...	Upper tail coverts and middle pair of tail feathers of different colours ...	48	L. erythronotus	
	151 ...	Upper tail coverts and middle pair of tail feathers of the same colour ...	49	L. cristatus	
149 ...	152 ...	Bill flat, broad; margin merely notched		Hemipus	
	153 ...	Head and back glossy black...	50	H. picatus ♂	
	154 ...	Head and back brown ...	50	H. picatus ♀	
148 ...	155 ...	Tail square... ...		Tephrodornis	
	156 ...	Outer tail coverts white; wing considerably under 4 in.	51	T. pondicerianus	
146 ...	157 ...	Shafts of rump feathers spinous			
	158 ...	Tail greatly graduated ...		Pericrocotus	... 168
	159 ...	Tail black and red; upper tail coverts red ...			
	160 ...	Crown and back glossy black			
	161 ...	Tertiaries with isolated red oval drops ...			
	162 ...	First four primaries entirely black	52	P. flammeus ♂	
	163 ...	Crown and back ashy or gray			
	164 ...	Wing not exceeding 3 in. ...			
	165 ...	Lower plumage grayish black on throat; breast scarlet	53	P. peregrinus ♂	
	166 ...	Lower plumage pale yellow		do. ♀	
	167 ...	Tail black and yellow; upper tail coverts yellow ...	52	P. flammeus ♀	
158 ...	168 ...	Tail moderately graduated ...			
	169 ...	Secondaries falling short of tip of wing by about length of tarsus ...		Campophaga	... 174
	170 ...	Wing barely exceeding 4 in.			
	171 ...	Supercilium absent or faint			
	172 ...	Throat in adult black; abdomen gray ...	54	C. sykesi ♂	
	173 ...	Throat and abdomen white, cross-barred with brown ...	54	C. sykesi ♀	

169 ...	174 ...	Secondaries falling short of tip of wing by about twice the length of tarsus ...		Graucalus	
	175 ...	Tail broadly tipped with white	55	G. macii	
145 ...	176 ...	Wing when folded reaching quite to tip of tail; first primary very minute, much shorter than tarsus; second primary longest in wing ...		Artaminæ Artamus (only one genus)	
	177 ...	Rump of the same colour as the back ...	56	A. fuscus	
144 ...	178 ...	Plumage of the nestling streaked		—	... 198
	179 ...	With rictal bristles ...		—	... 188
	180 ...	First primary quite half the length of second ...		Oriolidæ Oriolus (only one genus)	... 184
	181 ...	Tail black and yellow or green			
	182 ...	Nape black, crown yellow ...	57	O. indicus	
	183 ...	Nape and crown black ...	58	O. melanocephalus	
180 ...	184 ...	First primary much less than half the length of second...		Eulabitidæ	
	185 ...	Fleshy wattles on the head...		Eulabes	
	186 ...	Some bare skin on sides of head	59	E. religiosa	
	187 ...	No bare skin on sides of head	60	E. ptilogenys	
179 ...	188 ...	Without rictal bristles ...		Sturnidæ	
	189 ...	Wing pointed; secondaries falling short of tip by more than length of tarsus ...		—	... 191
	190 ...	Crest extremely long ...		Pastor	
			61	P. roseus (only one species)	
189 ...	191 ...	Wing blunt; secondaries falling short of tip by less than length of tarsus ...			
	192 ...	Crest much longer than tarsus		Temenuchus	
			62	T. pagodarum (only one species)	
	193 ...	Crest shorter than tarsus ...			
	194 ...	Bare skin on side of head ...			
	195 ...	Frontal feathers short, inclined backwards ...		Sturnornis	... 196
			63	S. senex (only one species)	
195 ...	196 ...	Frontal feathers lengthened and erect... ...		Acridotheres	
	197 ...	Under wing coverts and axillaries white ...	64	A. melanosternus	
178 ...	198 ...	Plumage of the nestling mottled or squamated ...			

	199	Nostrils more or less covered by hairs		Muscicapidæ	233
	200	Tail considerably shorter than wing		—	223
	201	Second primary very much shorter than fifth			
	202	Frontal feathers of ordinary structure not concealing the nostrils			
	203	Rictal bristles short, few, generally less than six			
	204	Sexes different			
	205	In both sexes base of tail white; upper plumage brown or rufescent, never blue nor black		Siphia	208
	206	Chin, throat, breast, and upper abdomen chestnut, surrounded by a black band	65	S. hyperythra ♂	
	207	No chestnut on lower plumage	65	S. hyperythra ♀ and young	
205	208	Males with whole upper plumage blue or black; lower plumage never entirely blue or green. Females brown or rufescent above; never combined with black upper tail coverts or white on tail		Cyornis	216
	209	No white on tail			
	210	Upper plumage blue			
	211	Crown, rump, and back of the same blue			
	212	Breast ferruginous or chestnut			
	213	Chin and throat blue	66	C. rubeculoides ♂	
	214	Throat ferruginous like breast	67	C. tickelli	
	215	Upper plumage brown or rufescent	66	C. rubeculoides ♀	
208	216	Both sexes with the entire plumage suffused with blue or green		Stoparola	218
	217	No white on tail	68	S. sordida	
216	218	Sexes alike; plumage plain brown or rufous throughout			
	219	First primary much less than half second		Alseonax	
	220	Upper plumage and tail ashy brown with tinge of rufous	69	A. latirostris	
	221	Upper plumage ruddy brown; upper tail coverts ferruginous; tail brown, suffused with rufous on the outer webs of the feathers only	70	A. muttui	

	222 ...	Rictal bristles long, numerous, about ten on each side ...		Culicicapa	
220 ...	223 ...	Tail as long or longer than wing	71	C. ceylonensis (the only species)	
	224 ...	Head crested ...		Tersiphone	... 228
	225 ...	Crest long and pointed, reaching to the upper part of back			
	226 ...	Throat and sides of head ashy	72	T. paradisi ♀ at all ages and ♂ before second autumn	
	227 ...	Throat and sides of head glossy black ...	72	T. paradisi ♂ after second autumn moult	
224 ...	228 ...	Head not crested ...			
	229 ...	Tail about equal to wing ...		Hypothymis	... 231
	230 ...	Abdomen, vent, and under tail coverts white ...	73	H. azurea	
229 ...	231 ...	Tail considerably longer than wing		Rhipidura	
	232 ...	Forehead and sides of crown broadly white ...	74	R. albifrontata	
199 ...	233 ...	Nostrils not covered by any hairs		Turdidæ	
	234 ...	Tarsus smooth; rictal bristles present; the insect food captured by sallies from a fixed perch		Saxicolinæ	... 238
	235 ...	Bill broad at base; rictal bristles numerous and strong...		Pratincola	
	236 ...	Plumage entirely black and white	75	P. atrata ♂	
	237 ...	Chin and throat brown; upper tail coverts deep ferruginous	75	P. atrata ♀	
234 ...	238 ...	Tarsus smooth, except in Thamnolia; rictal bristles present; insect food captured on the ground ...		Ruticillinæ	... 254
	239 ...	Tail rounded or square ...			
	240 ...	Tail largely chestnut ...		Cyanecula	... 243
	241 ...	Throat blue with a chestnut spot in the centre ...	76	C. suecica	
	242 ...	Throat buffish white ...	75	C. suecica ♀	
246 ...	243 ...	Tail without any chestnut ...			
	244 ...	First primary longer than one-third of second ...			
	245 ...	Tail equal to or shorter than wing		—	... 252
	246 ...	Outer tail feathers falling short of tip of tail by less than half length of middle toe		—	... 250
	247 ...	Bill slender, curved; no rictal bristles		Thamnobia	

	248 ...	With white on the wing coverts	77	T. fulicata ♂	
	249 ...	No white on the wing coverts	77	T. fulicata ♀	
246 ...	250 ...	Outer tail feathers falling short of tip of tail by a distance quite equal to length of middle toe ...			
	251 ...	Tail black and white ...		Copsychus	
			78	C. sauluris (one Indian species)	
245 ...	252 ...	Tail much longer than wing		Cittocincla	
	253 ...	Abdomen rufous ...	79	C. macrura	
238 ...	254 ...	Tarsus smooth; rictal bristles present; habits both terrestrial and arboreal, being insectivorous and frugivorous		Turdinæ	
	255 ...	Bill narrow; breadth at forehead not more than half length of culmen; rictal bristles well developed ...			
	256 ...	Sexes different in colouration		—	... 268
	257 ...	Axillaries and under wing coverts in both sexes uniform		Merula	... 260
	258 ...	General colour black or brown without distinctive marks	80	M. kinnisi ♂	
	259 ...	Plumage variegated ...	80	M. kinnisi ♀	
257 ...	260 ...	Axillaries and under wing coverts contrasted in both sexes		Geocichla	... 263
	261 ...	No chestnut on lower plumage	81	G. wardi	
	262 ...	Almost entirely chestnut below	82	G. citrina	
260 ...	263 ...	Axillaries and under wing coverts in males uniform; in females barred with two colours		Petrophila	
	264 ...	Lower plumage almost uniform; barred or squamated with black or brown ...			
	265 ...	Above blue, or suffused with blue			
	266 ...	Under wing coverts and axillaries blue; narrowly tipped with white ...	83	P. cyanus ♂	
	267 ...	Under wing coverts and axillaries barred with black or brown... ...	83	P. cyanus ♀	
	268 ...	Sexes alike			
	269 ...	Lower plumage barred or spotted		Oreocincla	
	270 ...	Feathers of upper plumage boldly tipped with crescentic black bars ...	84	O. imbricata	

	271	Upper plumage plain	85	O. spiloptera	
5	272	Nostrils pierced partly within the line of forehead; space between nostril and edge of mandible greater than between nostril and culmen		Ploceidæ	
	273	First primary about as long as the tarsus; a partial spring moult		Ploceinæ	281
	274	Bill much longer than high; no nuchal hairs; difference between wing and tail more than length of tarsus		Ploceus	
	275	Crown of head yellow			
	276	Breast yellow	86	P. baya (breeding male)	
	277	Breast fulvous, boldly streaked with black	87	P. manyar (breeding male)	
	278	Crown of head brown			
	279	Lower plumage pale fulvous	86	P. baya (females and males in winter)	
	280	Breast boldly streaked with black	87	P. manyar (females and males in winter)	
273	281	First pirmary very minute, much shorter than tarsus; no spring moult		Viduinæ	
	282	Middle pair of tail feathers narrow and pointed			
	283	Tail rounded, crown black		Munia	285
	284	Lower breast and sides of body white	88	M. malacca	
283	285	Tail wedge-shaped; crown of much the same colour as back		Uroloncha	
	286	Rump white	89	U. striata *	
	287	No white on rump			
	288	Shafts of feathers of upper plumage pale; upper tail coverts black or tipped with glistening fulvous		—	292
	289	Abdomen and sides of body cross-barred with brown			
	290	Chin and throat black	90	U. kelaartii	
	291	Chin and throat chestnut	92	U. punctulata	
288	292	Shafts of feathers of upper plumage of same colour as feathers; upper tail coverts white	91	U. malabarica	
4	293	Wing with nine primaries, first and second nearly equal			
	294	Bill conical, pointed entire; longest secondaries reaching to a point midway between the middle of the wing and the tip		Fringillidæ	3

	295 ...	Upper mandible not produced backwards beyond front line of orbit; inferior outline of lower mandible with a slight re-entering angle; cutting edges of upper and lower mandibles everywhere in contact ...	Fringillinæ
	296 ...	A yellow patch on throat; no pattern on outer webs of earlier primaries ...	Gymnorhis ... 297 93 G. flavicollis (only one species)
296 ...	297 ...	No yellow patch on throat ...	Passer
	298 ...	Back streaked with black ...	
	299 ...	No supercilium ...	94 P. domesticus ♂
	300 ...	A supercilium ...	94 P. domesticus ♀
294 ...	301 ...	Bill flat, broad, notched; the longest secondaries reaching to the middle of the wing	Hirundinidæ .. 310
	302 ...	Tarsus and toe bare ...	
	303 ...	Upper plumage or the greater portion of it glossy black ...	Hirundo
	304 ...	Rump blue or brown ...	
	305 ...	A complete pectoral band ...	95 H. rustica
	306 ...	No pectoral band ...	96 H. javanica
	307 ...	Rump chestnut ...	
	308 ...	Lower plumage pale rufous, paler than ear coverts ...	97 H. erythropygia
	309 ...	Lower plumage chestnut, darker than ear coverts ...	98 H. hyperythra
301 ...	310 ...	Bill long, slender, notched; the longest secondaries reaching nearly or quite to the tip of the wing ...	Motacillidæ
	311 ...	Upper plumage neither streaked nor mottled, but plain ...	— ... 318
	312 ...	Middle pair of tail feathers as long as the others or longer	Motacilla ... 317
	313 ...	Hind claw much curved and shorter than hind toe ...	— ... 316
	314 ...	Plumage black, white, and gray	99 M. maderaspatensis
	315 ...	Plumage largely yellow and green	100 M. melanope
313 ...	316 ...	Hind claw little curved and much longer than hind toe	101 M. borealis
312 ...	317 ...	Middle pair of tail feathers abruptly shorter than the next, and of a markedly different colour ...	Limonidromus 102 L. indicus (only one species)

311 ...	318 ...	Upper plumage streaked or mottled		Anthus	
	319 ...	Wing 3·5 in. or more ...		—	... 322
	320 ...	Tarsus 1·2 to 1·3 in. ...	103	A. richardi	
	321 ...	Tarsus 1 to 1·1 in. ...	104	A. striolatus	
319 ...	322 ...	Wing about 3 in.	105	A. rufulus	
3 ...	323 ...	The hinder part of the tarsus transversely scutellated ...		Alaudidæ	
	324 ...	Ten primaries, the first minute		—	... 327
	325 ...	First primary large, considerably exceeding the primary coverts		Mirafra	
	326 ...	Inner web of outer tail feather dark brown ...	107	Mirafra affinis	
324 ...	327 ...	First primary very small, not exceeding the primary coverts			
	328 ...	Hind claw long and straight		Alauda	... 330
	329 ...	Small; wing seldom exceeding 3·5 in. ...	106	A. gulgula	
328 ...	330 ...	Hind claw very short and curved		Pyrrhulauda	
	331 ...	Lower surface blackish ...	108	P. grisea ♂	
	332 ...	Lower plumage pale rufous or whitish ...	108	P. grisea ♀	
2 ...	333 ...	Both mandibles finely and evenly serrated on the terminal third of their edges			
	334 ...	Bill long, fine, cylindrical; ten primaries ...		Nectariniidæ	... 350
	335 ...	Sexes different; plumage of male in part metallic; bill slender; nest pensile ...		Nectariniinæ	
	336 ...	Covering membrane of nostril bare		Arachnecthra	
	337 ...	Chin and throat dark coloured and metallic ...			
	338 ...	Lower plumage below the breast dark coloured ...			
	339 ...	Abdomen snuff brown ...	109	A. lotenia ♂	
	340 ...	Abdomen violet black ...	110	A. asiatica ♂	
	341 ...	Lower plumage below the breast yellow ...			
	342 ...	Back crimson ...			
	343 ...	Upper tail coverts metallic red	111	A. minima ♂	
	344 ...	Upper tail coverts metallic purple	112	A. zeylanica ♂	
	345 ...	Chin and throat pale-coloured and non-metallic ...			
	346 ...	Bill from gape 1 in. or more	109	A. lotenia	
	347 ...	Bill from gape less than 1 in.	110	A. asiatica ♀	
	348 ...	Rump and upper tail coverts red	111	A. minima ♀	
	349 ...	Chin and throat ashy white; remaining lower parts bright yellow ...	112	A. zeylonica ♀	

334 ...	350 ...	Bill short and triangular; primaries 9 or 10		Dicæidæ	
	351 ...	Nine primaries, first reaching to tip of wing ...			
	352 ...	Bill slender; lower line of inferior mandible almost straight		Dicæum	... 357
	353 ...	No red on upper plumage ...			
	354 ...	Lower tail coverts same colour as abdomen ...			
	355 ...	No red on breast ...			
	356 ...	Bill yellow	113	D. erythrorhyncus	
352 ...	357 ...	Bill thick; lower mandible swollen; its lower edge much angulate ...			
	358 ...	Tail rounded; nostrils covered by long hairs ...		Acmonorhyncus	... 359
			114	A. vincens (the only species)	
358 ...	359 ...	Tail square; nostrils bare ...		Piprisoma	
	360 ...	Upper plumage and side of head ashy green; lower mandible coarse ...	115	P. squalidum	
1 ...	361 ...	Intrinsic muscles of the syrinx fixed at or near the middle of the bronchial semi-rings ...		Mesomyodi	
	362 ...	Ten primaries, the first of large size, distinguish this family from other ten primaried Passeres (see 4). The crown has a conspicuous crest ...		Pittidæ	
	363 ...	Feathers at side of nape not conspicuously lengthened...		Pitta	
	364 ...	Lower plumage with some brilliant crimson. Under wing coverts black, with a large white patch ...	116	P. brachyura	

7. On the motion of the Chairman a vote of thanks was accorded to the writers of the Papers read.

8. A vote of thanks to the Chair terminated the proceedings of the Meeting.

COUNCIL MEETING.

Colombo Museum, July 4, 1898.

Present:

The Lord Bishop of Colombo, President, in the Chair.

Mr. Staniforth Green. | Mr. E. S. W. Senáthi Rájá.

Dr. W. G. Vandort.

Mr. G. A. Joseph, Honorary Secretary.

Business.

1. Read and confirmed Minutes of Council Meeting held on May 18, 1898.

2. Resolved the election of the following Candidate as a Resident Member of the Society:—

H. O. Barnard, Assistant Superintendent, Survey Department: recommended by { A. Haly. G. A. Joseph. }

3. Laid on the table Circular No. 96 of May 21, 1898, containing Mr. F. H. de Vos's translation of Wan Wezel's manuscripts on "Elephants in Ceylon," referred to Dr. Vandort for his opinion.

Resolved,—That in view of Dr. Vandort's report the Paper be accepted to be read at a General Meeting of the Society, and published in the Society's Journal.

4. Laid on the table a Paper entitled "Purananúru," by Mr. P. Arunáchalam, C.C.S.

Resolved,—That Mr. Arunáchalam be thanked for forwarding his Paper, but he be informed under the regulations guiding the Council the Paper is inadmissible, as it has already been printed elsewhere.

5. Laid on the table Paper entitled "Don Jeronimo de Azevedo, Governor of Ceylon, 1594–1611 A.D.," finally revised by Mr. A. E. Buultjens.

Resolved,—That the Paper be accepted and be read at a General Meeting of the Society and published in the Society's Journal.

6. Laid on the table a letter from Mr. F. H. de Vos regarding his Paper "The Monumental Remains of the Dutch East India Company in Ceylon."

Resolved,—That the Paper be accepted and printed, and that the Secretary do ascertain the cost of reproducing the illustrations, in order to find out if it is feasible for the Society to reproduce them.

7. Resolved,—That a General Meeting of the Society be held on a date to be fixed by the Secretary subject to the President's approval, and that the business of the Meeting be the reading of the following Papers :—

(1) Mr. F. H. de Vos's translation of Wan Wezel's manuscripts on "Elephants in Ceylon."

(2) Mr. A. E. Buultjens' Paper on "Don Jeronimo de Azevedo, Governor of Ceylon, 1594-1611 A.D."

8. Mr. Senáthi Rájá gave notice of the following motion to be brought at next Council Meeting :—"That the General Meetings of the Society be held hereafter at 5 P.M. instead of 9 P.M."

GENERAL MEETING.

Colombo Museum, August 20, 1898, 9 p.m.

Present :

The Lord Bishop of Colombo, President, in the Chair.

Mr. Staniforth Green, Vice-President.
Mr. A. E. Buultjens.
Mr. E. R. Goonaratna.
Mr. E. E. Green.
Mr. P. E. Morgappah.

Mr. G. A. Joseph, Honorary Secretary.

Visitors : four gentlemen.

Business.

1. Read and confirmed Minutes of General Meeting held on June 25, 1898.

2. The Honorary Secretary announced the election of the following Member since the last General Meeting :—

Mr. H. O. Barnard.

3. The Honorary Secretary read the following Paper :—

A PERTINENT ACCOUNT AND DETAILED DESCRIPTION OF THE CHARACTER, NATURE, COITUS, AND PRODUCTION OF ELEPHANTS IN THE GREAT ISLAND OF CEYLON, WITH A FURTHER SKETCH OF HOW THOSE BEASTS ARE TRACKED, CHASED, AND CAPTURED IN THE WILD FORESTS; AND ALSO HOW THEY ARE STALLED AND TAMED AND SOLD ON ACCOUNT OF THE HON. DUTCH EAST INDIA CO., compiled and published, according to the knowledge which can be derived in respect thereof, not only from one's daily experience, but from other clear proof presented to us, and from our own observations, by Cornelis Taay van Wezel,[1] Acting "Gezaghebber" of the "Commandement" of Galle, also "Land-drost" and "Hoofd" over the lands of Matara, Ao. 1713.

Translated from the Dutch by F. H. DE VOS, Barrister-at-Law.

NOTWITHSTANDING that the well known *Plinius* in his time had undertaken a treatise on, and description of, many strange and rare animals found in various lands and parts of the world, and amongst them the elephants found in various regions, yet I being incited to it by a strange fancy will take the trouble to give a fuller account of the aforesaid great beasts, and publish the same for the delectation of those curious in these matters, seeing that I, by a close investigation into, and experience of, these matters, have remarked and found that the aforesaid author has made some mistakes, as will be seen on a comparison of these pages with the description of the aforesaid *Plinius*. But in order not to delay the reader by a reference to those points on which *Plinius* and I differ, I shall proceed to treat of what has

come within my observation by remarking, in the first place, that it is sufficiently acknowledged and known to all the world that the elephants are the largest quadrupeds known to man, being by some held to be the largest of all animals. But if there be any hesitation to accept this as true however, although in point of artfulness and natural cunning the elephants do not come up to other wild beasts, such as foxes, monkeys, &c., yet that the elephants are exceedingly docile are found by many living and clear proofs, for they are used by many Indian potentates and princes, not only for purposes of ceremonial and show, but also in war, to injure the enemy by means of heavy long iron chains, which they swing about so lustily with their trunks that many are knocked down and killed thereby.

Elephants are also kept and used in the courts of many Indian kings and princes only to show their power and majesty to foreigners and their own subjects; for they seem to place and set in this a special honour and glory, the elephants being, in the Court of the Emperor of Ceylon or King of Kandy, on the arrival or departure of any ambassadors, drawn up in a double circle, as is customary in the army before princes and exalted personages, without in any way seeking by this comparison to show any similarity the one to the other.

These elephants in Kandy were not only kept and used for show and honour, but also as executioners,[2] to put to death criminals, for those guilty of treason or other serious, nay even trivial, offences were thrown before the elephants, who in no time tear and crush these unfortunate men with their tusks and feet, and sometimes seizing them in the middle with their trunks they throw them up perpendicularly, catch them with their tusks, and then kill them—a fearful and horrible sight, fit to deter all onlookers from all evil designs. These aforesaid elephants are specially taught and instructed in this, being quick and dexterous in this business of carrying out the wishes and orders of their masters.

In addition to this, the elephants were taught various tricks for the amusement of those who take pleasure therein, viz., the raising of the trunk, kneeling on their forelegs to all appearance of reverence, the parrying of blows with the trunk and feet, and various other drolleries,[3] which I shall not mention here; and I begin now to duly carry out my undertaking and give a clear and concise account of the subject of this Paper.

The *coitus* and propagation of these large animals take place in the same way as other beasts, without any difference, January and February being the ordinary seasons when they become "must," and they are seldom seen to come together outside these months, although it sometimes happens.

When the elephants are with young they only get in milk about the seventh month, and then their dugs drop a bit and begin to increase in size; and they begin to procreate when they are fifteen to sixteen years old, not earlier, but, if anything, later, when they are fully developed, never getting more than one young at a time; but how often an elephant drops its young cannot be stated with any certainty.

It is indeed wonderful and hardly credible what little milk elephants that have given birth to young give. For although one would think that such great beasts would, as compared with other animals, give a large quantity of milk to rear their young, yet it is found that they scarcely give out more than a canful at a time. It cannot therefore be conceived how such beasts can be kept up and nourished with such little nutriment. But it should be considered that the milk of the elephant is very fatty and potent, excelling in this respect that of all other known animals, as has been found by experience, for otherwise the young could not live and would necessarily die of hunger and thirst, it being affirmed by many Sinhalese as the truth that an elephant just born becomes quite strong and active in three days on a little elephant's milk and honey given to it

of a morning. But this should be looked upon as a mere story. But it is well known and certain that the kings of Kandy have been in the habit from a long time, when they wish to blind any criminals, to tie a piece of cloth soaked in sulphur and elephant's milk round their eyes, when they become incurably blinded in less than half or three-quarters of an hour. It ought also to be remarked that the elephant's milk is not quite white, but blueish, the young taking suck about three or four times a day, but very little at a time, without being at the dugs very long. It is also found that the tusked young remain some months longer at the dugs than the *alias* and she-elephants, who generally cease to suck about the fifth year.

An elephant's period of gestation[4] is fully a year or twelve months, after which it is delivered of its young in a manner which sufficiently indicates to man the wonderful prescience with which Nature has endowed these wild beasts. For the mother, feeling that the time has arrived to be delivered of its young, goes down on her hind legs in order to shorten the fall and obviate danger of injury, and doing her best to give birth to her young; and as soon as the young is born, it begins stroking it gently and softly with the trunk and bringing it to the dugs, it being necessary to note here that the udders of an elephant are not like other animals, behind, but have been placed by Nature between or close to the fore legs.

When an elephant brings forth before the appointed time the young is covered with a sort of net or membrane, which the mother (to the amazement of man) knows how to gently and softly remove with its trunk without causing any pain or hurt to the young, in which case the young beasts sometimes die, but, on the other hand, sometimes live and grow.

A young elephant when born is found to be generally about $1\frac{7}{8}$ *cobidos*[5] ($2\frac{2}{3}$ Rhenish feet) high and $2\frac{1}{2}$ to $2\frac{5}{8}$ *cobidos* long, furnished with tolerably long hair over the entire body. But after some time the said hair falls off, except at the end

of the tail, where a tuft remains, serving as a special sign of beauty, by which the Indians and lovers of elephants set great store. But how many inches an elephant grows a year cannot be exactly stated, nor can any certain information be derived regarding this matter. But I must here state that I have seen that the beasts who have been in the stalls for 3, 4, yea 8, 10, to 12 months, have grown 1, 2, 4, 7, yea 10 and 11 inches, *i.e.*, young and not fully developed beasts; but seeing that this growth is not the same in all cases, nothing can be stated with certainty in respect thereof.

When a she-elephant with calf dies before the latter is able to eat leaves or other hard food, it is kept up and nourished with *cansje*,[6] being watery cooked rice with some jaggery balls or black sugar, by which sometimes the lives of these little beasts are spared, and afterwards they are put to other food, although in most cases (if they are quite too young) they languish and die.

Further, it seems strange to note the evident sorrow and grief which cow-elephants manifest on the death of their young, and it is often noticed and remarked that they (so to speak) weep bitterly and shed tears, stroking the dead body with their trunks, without taking any food till they themselves die, or have quite forgotten their young.

The elephants like all other animals are subject to various diseases, maladies, and ills, for which all necessary remedies for their recovery are resorted to by the doctors, as purgatives, syringing, bleeding, lancing of abscesses, appostumation (cupping ?), and otherwise. And the ulceration or wounds (which are sometimes caused by binding fast ropes to the four feet and neck and otherwise) are cured by large tufts made of cocoanut husk or rags soaked in a sort of lotion or oil (according to the nature of the accident), being bound various times a day. And wicks of cloth are inserted into the wound; and it cannot be omitted to be stated here that most of these medicines are generally made in various ways, of green and dried drugs, roots, and shrubs, found in Ceylon in the jungles

or thickly-grown woods and adjoining fields. And it remains to be considered here that when elephants have a film or any other trouble in the eye and cannot be treated in consequence of their fury and rage, a sort of syringe is used to squirt the medicine into the eyes and thus to bring about their recovery.

If an elephant is bitten and injured by a venomous snake without its being noticed, we can know it by the looseness of the hair, which then begins to fall and come off, in which case the *wedderala* or physician is brought into requisition, and he at once applies the necessary remedies to cure the said beast, and recovery generally takes place if the remedies are ready at hand and applied at once, otherwise such elephants run a risk and generally die.

After close investigation and much experience it has been ascertained that the elephant (except in the case of death by accident) can live from 100 to 110, sometimes even to 120 years, when they languish and die of nothing but old age.[7] It is also necessary to point out in this place that if an elephant is down with any malady or accident, it seldom rises again, but generally remains lying thus till it dies, so that all hopes are given up when elephants are reduced to this condition.

The elephants found in various parts of India are of various *castes* or kinds, which have the following names, viz., *Panderye*, *Tambelye*, *Pingelye*, *Gandeye*, *Mangelye*, *Hemeye*, *Oepasatye*, *Satdantye*, *Calewockeye*, and *Gangeye*; but of these we have in Ceylon the first four *castes*, which are stronger and more spirited than the last two, and weaker than the other four kinds. But as regards the propagation of the species, there is no difference between the *castes*, and nothing further need be said on this point.

The largest elephants caught and tamed in Ceylon are from 9 to 9½ Rhenish feet; for although larger elephants are found in the forests of other countries, those of Ceylon are better taken care of and esteemed,[8] being generally more docile and quicker at learning things than those from

Aatchin, Siam, Tamasserye, and Aracean or other regions, so that the merchants who yearly negotiate with the East India Company for elephants pay a large sum for those from Ceylon, as will be shown at length hereafter.

Elephants are often "baptized"[9] with the name of *holbuiken* (*lit.* hollow stomachs, *i.e.*, gluttons), and this for good reason, as they must continually eat by night and day, except during the short intervals of sleep, without their hunger being in any way appeased, having a great heat and boiling in the stomach, by reason whereof what they eat is in a short time, and sometimes in less than a quarter of an hour, sufficiently digested and passed in the usual way.

And in order that one should not doubt the truth of this, it should be stated here that it has often been observed that when they have swallowed whole, without breaking them, a certain kind of round fruit called *bolanges*[10] and slime apples, it is known in Ceylon that the shells of the fruits (little less than the little finger in thickness) are found to have been passed quite empty without any kernel in them, the same being digested in a short time, notwithstanding that the shell being so hard one would have thought it impossible that what was contained in it should be absorbed in so short a time.

When the elephants are in the stables they are fed on *pisang* trees (arecanut), branches of the *clappus* (cocoanut) trees, and all sorts of grass. But in the jungle they eat besides *nely* (paddy) and other fine grain, also various kinds of branches and leaves called in the Sinhalese language *panakolle*, *kaylewel*, *patnoege*, *oeggas*, *mandoewel*, *annekaskolle*, and other kinds too numerous to enumerate here, and of little avail to satisfy the curiosity of the reader.[11] Therefore I shall touch on other points, and say that as the elephants have to be continually eating to satisfy their hunger, so it is no wonder that they drink a large quantity of water in proportion to the food which they consume in such quantity; and I have seen with my own eyes an elephant drink fifty cans of water at a time. It remains also

to be remarked here that wild elephants in the jungle drink water twice a day, viz., in the morning and evening, going for that purpose to certain rivers, streams, and other watering places. But in the stalls they are not allowed to drink more than once a day, that is, when they are brought to the river and washed, when they swell themselves as much as Nature will let them, without being in any way hindered thereby.[12]

As regards the period during which elephants can go without food or drink, it may be stated, for the satisfaction of those who are fond of the elephant, that these elephants have been found by experience to go without water at most for three days, and can remain longer without food, but by remaining long without food or drink they languish and die of weakness, which, regarding their hungry and thirsty nature, which is great, is not to be wondered at.

And as all living creatures have their times of sleep and wakefulness, so elephants, like many other quadrupeds, sleep stretched out, but not longer than an hour or hour and a half in the evening, when they rise again and refresh themselves with eating, and afterwards go to sleep again about morning, but not for more than an hour at most, so that these beasts generally sleep from two and a half to three hours a day, sometimes also resting during the day, but seldom, and never longer than half an hour, sometimes less if they are not very hungry or otherwise, for they seem to prefer eating to sleeping.

These elephants have also great power in the tooth, and are strong in carrying loads, for they have been seen to crack with their teeth a hard cocoanut in pieces as if it were a hazelnut. And they bear on their shoulders a burden of 1,200 pounds weight and go about with ease. And the noise and cry of these elephants is so great and piercing that the earth seems to tremble in consequence, and when heard at night of a sudden is enough to frighten the boldest man, especially when their cry is followed by an echo in the dark jungle. But it is wonderful what small eyes they

have in proportion to their bodies, for they are not larger than the eyes of an ordinary horse, from which one would conclude that they are not so sharp-sighted as other beasts in seeing things at a distance. And as regards their pace, I shall state here that, although they are bulky and heavy beasts, they have been found to go eight to nine miles in a day, although such journeys have to be undertaken in the morning and evening, when the heat of the sun can hinder them least, for otherwise they would run the risk of being overcome by the great heat of the sun.[13] Therefore, when such beasts are taken from one place to another care should be taken to note this, in order to avoid all inconvenience. It is remarkable also that these elephants are more quick at turning round towards the right than the left, so that those who are pursued by these animals in the jungle should take the opportunity of turning to the left to avoid danger and get out of the scrape.

And although one would think that elephants in consequence of their heavy bodies would find difficulty in saving themselves from drowning in deep water, the contrary is the case.[14] But our observation tells us that when these beasts are in a healthy state they can swim a quarter of a mile in a strange and wonderful manner.[15] For, generally, there is seen only a part of the trunk through which they breathe and blow out the water, but sometimes the head is above and the body hidden, and it cannot be said for certainty whether they take in any water whilst swimming.

And although an elephant is very strong and able to do much injury, yet it is not savage by nature like many other wild beasts, which can never or seldom be tamed or governed, and always preserve their natural instincts. But elephants, on the contrary (although caught full-grown), are so tractable and obedient in a short time that they can be quietly and easily led and managed as one likes, yea, it has been found that these great beasts are so frightened and tremble at hard words of abuse that they appear to wish it understood that they are not used to them. And although

many ignorant people will scarcely believe this, I, who have seen this with my own eyes, can testify to it.[16]

But I must not forget to mention here that elephants during the breeding season become quite wild and violent, and great care should be taken of them during this period, by having them tethered with strong ropes or iron chains to strong trees or posts till their fury and natural impulses cool down, in order to prevent many sad accidents which might, and often do, arise therefrom if they are not secured in time, or before one begins to know that they are not to be trusted. This change in them can be discovered by an oily secretion in the hollows next to or above the eyes, which lasts so long as the desire to mate lasts.[17] But after a certain time this ceases, and they are again tame and tractable as they were before they became "must." It is wonderful to notice the honour and respect paid by the *alias* and cow-elephants to the tuskers, so much so that they gladly allow the little tuskers to take suck from them, although they belong to other mothers, but why there should be this preference is not permissible to be explained here.

In Ceylon there are found few elephants with large and long tusks, with which the cows are never furnished, and most bulls have no other teeth than those in their mouth for necessary use, and these are "baptized" by the Siṇhalese and Company's officers "*alias*,"[18] to distinguish them from those which are, as said before, furnished with tusks.

The heaviest elephant tusks found in Ceylon within the memory of man have been found to be each about 75 to 80 pounds in weight, which is not much compared with the weight of those found in Africa, America, and other parts of the world; for these are often bigger, thicker, and heavier than those in Ceylon. But as to the use to which tusks are put I shall make no mention of it here, seeing that it is well known and is outside the scope of this Paper. But as a matter of special observation I shall state here the requisite qualities of the full-grown elephant caught for the service and pleasure of the Emperor of Ceylon and King of

Kandy, and also those most suitable to the trade of the Hon. Company. The first kind aforesaid, most difficult to get and hence most prized, must have snow-white eyes, the apples of which are of a yellowish colour, the forehead spotted white, and two outstretched tusks of even length, the right being a little longer than the left, the trunk and tail reaching the ground, eighteen[19] white and clear nails in the four feet, viz., five and four on each forefoot and hindfoot respectively, the back running like that of a wild pig, and the ear whole. This is sufficient in the eyes of the king. But the elephants caught for the trade of the Company need only have their ears untorn, hair in the tail, and as many nails on each foot as stated above, without regard to the colour of the nails or eyes. On the other hand, all animals which are quite old, with ears damaged and with stumpy tails, and which have seventeen or less nails, are considered worthless, as being unfit for trade, and merchants at once turn away their faces from them, or offer very low prices for them.

We have sufficiently touched on the character of the elephant and how they breed, and shall now proceed to discuss the elephant hunt and the *coraal* or snare by which these animals are caught in parts of Mátara.

The *coraal* [20] or trap (which the accompanying sketch indicates as a flat plot of ground)* has two wings, No. 1 called *Rewoelwette* in Sinhalese, and three divisions with names, *Welgalle* No. 2, *Kelinagaale* No. 3, and *Hirregaale* No. 4. The first division, wherein the two wings (No. 1) are fixed, is generally and sometimes more than 500 roods in circumference or less, according as the master of the hunt finds the place suitable and the elephants hunted are great in number, and the second *coraal* is half as large, but the last (No. 4) is only 8 ft. broad and 4 to 6 roods long, and there are four drop-gates (No. 5) at the enclosure, which stand between the two wings, also one drop-gate between the first and the second division (Nos. 2 and 3), together with one more

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* Not reproduced.—*Hon. Sec.*

between the second and last division (Nos. 3 and 4). The enclosure round the *coraal*, or which constitutes the *coraal* proper, is made of heavy trees and posts tolerably close to each other, being 16 ft. to 18 ft. high and 3 to 4 ft. thick. These posts are driven about three-quarters of a fathom into the ground, and have generally four, five, or six cross-beams about 2 ft. above each other strongly bound with jungle creepers, and outside this *coraal* there is at a distance of each rood a support which lies diagonally across the enclosure to resist the rush of the elephants.

When the season arrives to organize the hunt, people (specially used for this purpose called *Waggekarreas* or spies) are sent to the jungles to find out where most of the elephants are to be found, which is done with necessary silence, and when they have made their report, preparations are begun for the hunt. But before I proceed to describe such hunt, I must here state shortly that the elephants are generally found in herds of from five, ten, to fifteen and twelve or more in the jungles, and it is seldom that they are found one or two alone, unless they are ill-tempered beasts known by the name of *ronkedoors* or mischief-makers (*lit.* snorters),[21] who graze alone and separate from the herd.

If a herd of elephants is separated from the rest in the jungle, one should set to work in order to enclose them all as it were in a pentagon, as appears clearly from the hereto annexed plan. The elephants being thus surrounded, all the herds are now driven to the middle of the appointed place, where they eventually meet, when the part of the place marked A and B is broken up and is brought to the two furthest ends of the wings C D, to make the elephants enter the *coraal* or snare.

When the elephants are thus driven within the wings they should be pursued with great uproar and beating of *tamblyntyes*, or native drums, with the discharge of guns, with weapons, the burning of torches, and carrying of burning pots on the head, and then from one end of the wing to the other, viz., along the line F F, great trees and jungle are

cut to a great distance to prevent the animals from breaking through and escaping.

The elephants being now enclosed within the two wings C D, are driven into the first (No. 1), and afterwards into the *maal coraal* (No. 2), and from the *maal coraal* into the *trave* (No. 3), the furthest end of which is, in such a case, strengthened with cross-beams and well secured to prevent escape, each beast that comes in here being at once secured by strong cross-beams from behind the body, so that it can go neither backward nor forward, and when four to five are caught they are brought out one by one.

But as I shall have to say something about this hunt at the end of this Paper, I should state here that the same requires great trouble and practice, and is well worth seeing to one who is fond of such things, notwithstanding the discomforts and dangers often attendant thereon, for it is wonderful how men play with these strong and wild beasts without showing any fear, although sometimes accidents do occur and many people are killed, but every possible precaution is taken against such accidents.

The elephants who are thus imprisoned in the *trave* and secured by cross-beams are closely examined, and should any great defects be observed in them which cannot be easily remedied, these beasts are allowed to escape into the woods, for otherwise they would have to be kept without being used for many years, and fed to the great expense of the natives.

And now to show how elephants are caught in the dominion of the King of Kandy, it must be stated at first that those who go to the forest for that purpose (consisting generally of from fifteen to twenty persons), when they meet a fine and fit beast, hide behind a great tree until they can get an opportunity to put a noose round one of its hind feet, which being done they keep it always fast bound to a tree when the beast begins to move, so that the beast finding much hindrance finally gets tired and worn out without being able to make much resistance, after which the said

elephant is tied to two hunting elephants and brought to the stalls and tamed. These nooses are made of strips of deer hide, which being twisted when damp and soft are found to become afterwards very strong and almost unbreakable. But in ancient times even in the Company's dominion there was another way of catching elephants, viz., by pits expressly dug for the purpose and carefully covered with thin sticks, leaves, and sand, in consequence of which the elephants cannot be aware of these pits when they are quietly driven to them until they fall into them. They are left in there some days until they are reduced to submission, through hunger and thirst, after which they are taken out of the pits and brought to the stalls. But as many beasts died in consequence of the heavy fall into the pits, this way of catching elephants was disapproved, and as a consequence has been given up these many years.

To take an elephant out of the *trave* one must first tie to each side of his neck a hunting elephant with five to six strong ropes, so that the ropes reach the extreme limits of the aforesaid stall, and thereafter the cross-beams at the end of the stall are drawn out and, as before, a rope is tied to each hind leg of the beast, which ropes are fastened to two high posts with three or four coils. The beast is then drawn out by veering out the rear ropes gradually, the two ropes behind slackened from outside, at the same time tying the beast close to the hunting elephant. And after it is brought to the stall, where there are two supports so far apart from each other that an elephant can easily put his head between them, and also a cross-beam which hangs close to the aforesaid supports, about two *cobidos* or less from the ground.

After an elephant has with the help of the hunting elephant been thus brought into the stall, and afterwards behind the aforesaid supports, he is allured with grass and other leaves so far forwards that he comes to put his neck between the aforesaid two posts. The cross-beam is then drawn up to touch the lower part of the neck, and at the

same time two ropes are attached to each support under the cross-beam, and the neck thus secured that the coil goes over the same under the cross-beam and round the supports, after which the neck is tied in the same way with two windings of rope, the end thereof being between the two supports drawn up and made secure to a beam. The two fore feet have each to be tied fast with a rope to the aforesaid supports, and there is yet another rope so close to this that it is about a hand's breadth from the others. The two hind feet are also first tied together in the same manner with two ropes, and to each of them are attached two other ropes, the ends of which are tied to two r opes standing on each side.

An elephant thus stalled is kept awake night and day, and always fed on grass and other food, and also untied once a day and brought to the water with the hunting elephants, not only to be refreshed and watered, but also to be washed and cleansed, they being taught in the meantime, on being shown the hook, to lie on the ground on their paunch, and to raise their feet, and carry a man on their back. The cuts caused to the neck and feet by the ropes are treated to lotions and liniments as stated before. But if they have any internal disease, remedies are prepared against this in the hollowed piece of an arecanut tree and thus administered, and in other ways according to circumstances. When an elephant has become tolerably tame and docile, he is stalled as follows: Having loosened all the aforesaid ropes and removed the cross-beam and the two supports, the fore right foot and hind left foot, or *vice versâ*, are each tied with two or three ropes to a post 3 or 4 ft. distant, so that the beast stands in the middle of the stall without moving to the right or left.

Having often spoken before of the hunting elephants used for bringing the newly-captured elephants out of the *coraal* into the stall and daily to water, it remains to be informed the inexperienced reader that these hunting elephants are made up of all kinds of defective and unsaleable elephants,

tuskers, *alias*, and cows, who after a length of time have become quite tame and have been properly taught how to treat their comrades between them and induce them to do their duty, for which reason these hunting elephants have from a long time been called *zielverkoopers*[22] (soul sellers) by the Company's servants ; but if tuskers are used for this purpose, the tusks are sawn off close to the snout and kept sawn yearly, in order to prevent them from digging into the wild beasts and injuring them.

The means or instruments which the *cornax* [23] or riders use to guide and regulate the aforesaid beasts consists only of two iron hooks, provided with points, and long sticks or wooden handles, of which the elephant is much afraid, not being able to endure the pricking or the tickling and thumping under the jaw bones, so that they in such cases utter a loud cry.

The servient people and servants of the Hon. Company used in the elephant hunt are of various castes, viz., *Lascoryns*, *Baddanas*, *Welkareas*, *Wagekareas*, and villagers; but of these, only the three first-named get maintenance or support on paddy or rice, and the villagers on the contrary get no compensation or reward and are bound to help in the hunt, the elephant hunt costing only in paddy or rice for the support of the labourers, generally amounting to 300 *parras* or 4 *lasts*. Therefore, the Hon. Company need only incur very little expense, except providing a quantity of *cayer* rope to tie the elephants with, which is not of much account.

For further understanding the subject, it is necessary to state here what kinds of servants and people are employed in catching and stalling the elephants, and to add a short account of their duties according to the services which they are bound to perform from their birth, viz. :—

Etbandene Vidane is called the master of the hunt.

Gaysenaike, first chief of the elephant stalls, with his dependants.

Wederale, physician of the elephant.

Araatse, overseer of the elephant stalls in the absence of the *Gaysenaike*.

Aatjes were also used as overseers to see that everything was all right.

Baddanas tie the trave and drive the elephants from the bushes into the *coraal*. They have also to confine the animals in the trave with ropes.

Welkareas must cut creepers and deliver them for tying the *coraals*.

Wagekareas, spies who go about the jungle, count the elephant herds, disclose matters of importance: how many beasts are found in each herd, and where they really are.

Pannikeas are minor chiefs with some *cornax* under them.

Cornax are overseers and riders of elephants.

Dourias and *Tanterias* are used to tie the wild elephants and also to control the hunting elephants.

Panneas have to bring grass and cocoanut leaves and provide all other food.

Olias are used for the preparation and application of medicines for the elephants suffering with internal complaints or external injuries.

So it can be seen what different kinds of people are necessary to be maintained for the service of the elephant, so that I shall not further speak on this point.

Most of the elephants which come into the hands of the Company are sold in Jaffnapatnam, in consequence of the good prices current there, established by the chief Government for the information of its servants, for which purpose the merchants of Golconda and other leading merchants on the Coromandel Coast pay their money into the Company's treasury there and remit by bill to Jaffnapatnam to be paid in elephants.[24] The valuation of these great beasts is accurately regulated, and their height, figure, and fine points are carefully noted, as their prices vary a great deal, for the slightest defects cause a diminution in the price, as the merchants are very hard to please. But the tuskers are generally very dear, and are sometimes sold for 2,800

rixdollars of 48 Dutch stuivers each, or for more of course if they are good big beasts without any faults or natural defects. But on the other hand, the small toothless elephants are valued at 100 to 200 or 300 rixdollars each, which price gradually increases to 3,000 rixdollars, according to the quality of the beast as stated before. But at all events the bull-elephants are more prized than the cows, as the Hon. Company yearly makes considerable profit by the sale of elephants in Ceylon, and the more so, as the expenses of catching them are not heavy, seeing that the huntsmen and others employed in the hunt have to be satisfied only with the food they get, without any claim for the least recompense for their services, seeing that they have been conquered by the sword and are enslaved to the lord of the land, as has been before stated when the expenses of the hunt were referred to.

When any elephants have been selected and finally bought by the merchants they are branded with hot irons on the rump with a mark, in order that they may not be fraudulently sold again, and to prevent disputes among the merchants, for each knows the marks with which his elephants have been branded. Some merchants are, however, in the habit of hanging boards with marks thereon on the necks of the elephants bought by them, and thus avoid the branding. But as such boards are easily removed and difficulties arise therefrom, this method is seldom followed, and branding as aforesaid is adopted for greater security.

When the merchants have thus bought the aforesaid elephants from the Hon. Company, and have no occasion to send the same at once to the Coromandel Coast, either for lack of boats or otherwise, the beasts remain at their own risk in the stalls till they are removed. In such cases the Hon. Company suffers no loss, but in some cases a helping hand is in justice given to these merchants.

And as I have spoken of *cobidos* in various places, so it is necessary, in order to a better understanding, to say that a

cobido is a lineal measure of 16 Dutch inches or $1\frac{1}{3}$ Rhenish feet, by which the elephants are measured to the first hump on the neck right over the forefeet. But to prevent all disputes and cause a proper measurement to be taken, a long pole of from seven to eight *cobidos* is used. It is made to stand perpendicularly on level ground by the side of the elephant, and another is placed horizontally on the hump, so that thereby the proper height is ascertained and the price regulated accordingly without prejudice either to vendor or vendee.

Besides the aforesaid, there is much to be said about the elephants, but as this Paper has already become longer than I expected I shall pass by the rest, and conclude this account with the hope that the reader will be satisfied with what I have written.

4. The Chairman read the following—

NOTES.

By F. H. MODDER.

[1] Cornelis Taay van Wezel was *Commandeur* of Galle (*circa* 1714–19). He was married to *Johanna van Rhee*, who was born at Negapatam on May 19, 1668, and died July 15, 1719. (See *Lapidarium Zeylanicum*, plate 47 ; *cf.* also plates 9 and 10.)

[2] *Tusks as Weapons of Offence.*—See Journ. R.A.S., C.B., 1889, vol. XI., p. 375, where *Saar* relates how *Cornelis Salvegad*, of Utrecht, standard-bearer, was ordered by the King of Kandy to be slain by the elephants for assaulting his captain. The Dutch edition, 1671, Amsterdam, contains at p. 46 an illustration of this incident.

Knox, in describing the execution of criminals by the state elephants of the former Kings of Kandy, says " they will run their teeth (tusks) through the body, and then tear it in pieces and throw it limb from limb." He gives a pictorial illustration of this mode of execution. But Tennent, on the authority of the Kandyan chiefs whom he consulted on the subject, did not think that the tusks were designed to be employed offensively. The trunk and feet were used as weapons of offence. (*The Wild Elephant*, pp. 16, 17.)

[3] *Wolfs*, in his *Reizen naar Ceylon*, p. 118, relates some ; *e.g.*, throwing up a ball and catching it ; undoing a parcel tied up with a handkerchief.

[4] The period of gestation is 629 days.

[5] *Height.*—Perhaps a corruption of the Portuguese *cubito*, a cubit. *Wolfs* says that a newly-born elephant is not higher than an el.

Mr. Rowland Ward, in his *Horn Measurements and Weights of the Great Game of the World*, 1892, p. 248, gives the following interesting particulars of elephant feet :—

Circumference.	Width at bottom, back to front.	Habitat.	Owner.
53½	18	Ceylon	H. Storey
52½	17	do.	H. E. Lindsay
52½	17	do.	Rowland Ward's collection
51½	—	do.	Capt. C. Hill
50	17	do.	H. E. Lindsay
49	—	do.	Capt. C. Hill
44	15	do.	J. B. Gardyne
43½	13½	do.	do.

It has been ascertained that the girth of the forefoot when the pressure of the animal's weight is exerted is exactly half the perpendicular height of the elephant (see Baker's *Wild Beasts and their Ways*, p. 19). According to this calculation the above instances given by Ward would be a low average for Ceylon. Tennent gives a better average. I know of one animal, a well-known decoy of Kurunẹ́gala, who stood 11 ft. The weight of a baby elephant, when born, is about 213 lbs.

[6] *Kanje*, rice broth ; Sinhalese *kenda*. In *Alewyn and Colle's* Portuguese-Dutch Dictionary (1714) the word is given as *Canja*, and defined as an "*Indische styfsel of pap van ryst gemaakt*," Indian starch or porridge made of rice.

[7] *Age.*—*Wolfs*, p. 108, knows of one that was in captivity fifty-one years. Fleurens, in *De la Longévite Humaine*, pp. 82-89, conjectures that the normal age of the elephant is 150 years. Tennent instances a case of a decoy attached to the elephant establishment at Mátara, which the records found among the papers left by Col. Robertson (son to the historian of Charles V.), who had a command in Ceylon in 1799, proved to have served under the Dutch during the entire period of their occupation, extending to upwards of 140 years ; and it was said to have been found in the stables by the Dutch on the expulsion of the Portuguese in 1656.

Baker says that it is impossible to define exactly the limit of old age, as there can be little doubt that captivity shortens the duration of life to a great degree. As an elephant cannot be fully developed in the perfection of ivory until the age of forty, Baker accepts that age in a wild animal as a starting point in life, and says that the term of existence would be about 150 years. (*Wild Beasts and their Ways*, p. 20.)

Caste.—*Hastisilpa*, a Sinhalese work which treats of the "Science of Elephants," describes with particularity their distinctive excellences and defects and the castes to which they belong. For "points of perfection" of an elephant see Baker's *Wild Beasts and their Ways*, p. 45.

[8] See *Wolfs*, p. 108 ; Albrecht Herport, in his *Oostindische Reizen* (Dutch ed., 1670) ; *Cey. Lit. Reg.*, vol. I., p. 383, says the same.

[9] See Journ. R.A.S., C.B., vol. XI., No. 39, p. 352. In the *Beknopte Historie*, p. 378, in speaking of certain elephants, it is said that the *voornœmde holbuiken* (the aforesaid gluttons) would follow.

[10] Woodapple ; Siṉhalese *dimbul*, or *divul*.

[11] Baker says that no less than 600 lb. of fodder is the proper daily allowance for an elephant.

[12] Elephants are fed at about an hour before sunset and then taken to drink water before actual night.

[13] Few animals suffer more from the sun's rays than the elephant, whose nature, says Baker, prompts it to seek the deepest shade. The distance which an elephant can travel a day is grossly underestimated. According to Baker, the African elephant is capable of a speed of fifteen miles an hour, which it can keep up for two hundred or three hundred yards, after which it would travel at about ten miles an hour, and actually accomplish the distance within that period. The Asiatic elephant might likewise attain a speed of fifteen miles for perhaps a couple of hundred yards, but it would not travel at a greater pace than eight miles an hour, and it would reduce that pace to six after the first five miles. (*Wild Beasts and their Ways*, p. 2.)

[14] The displacement of an elephant's carcase is less than the weight of water, although it swims so deeply immersed that it would appear to float with difficulty.

[15] It is difficult, says Baker, to describe the limit of an elephant's swimming powers ; this must depend upon many circumstances, whether it is following the stream or otherwise, but the animal can remain afloat for several hours without undue fatigue. (*Wild Beasts and their Ways*, p. 25.)

[16] For "Elephant Language" see articles by the annotator in the *Cey. Lit. Reg.*, vol. IV.

[17] *Must* is known among the Siṉhalese as *madda*. The approach of the "must" season is immediately perceived by the exudation, which is of an oily nature, and somewhat resembles coal tar in consistence, from a small duct on either temple. The "must" season varies from two to four months.

[18] *Aliyá* is the generic term for elephant. *Ẹtá* (female, *ẹtini*) is a tusker.

[19] See *Wolfs*, p. 116, to the same effect.

[20] *Coraal : Kraal.*—For sketches of kraals and capture of elephants see *Albrecht Herport* (Dutch ed., 1670), p. 178 ; *Baldœus* (Ceylon ed., 1672), p. 197 ; *Valentyn* (Ceylon), p. 46 ; *Ribeyro* (Lee's Trans.), p. 66 ; *Wolfs*, p. 109.

The following chronological list, which sets out the different kraals that have been held in the Island in the nineteenth century as far as

it has been in the annotator's power to cull the information, will be interesting for reference :—

1800.—Kraal in Taŋgalla District. 1 *Cordiner*, 265.

1801.—At Toppu in Negombo District, *ibid.*

1820.—A battue near Kalá-oya, North-Western Province. *Field Sports and Adventures in Ceylon*, by Lieut.-Colonel J. F. Campbell, who was Commandant of Kurunẹgala.

1840.—At Pinkunuwalagala in Panáwala, organized by Mahara Raṭémahatmayá and Molligoḍa Adigár.

1845.—At Panáwalagala, by Mahara Raṭémahatmayá.

1846.—At Panáwalagala, by the same Raṭémahatmayá.

Uncertain.—Mẹdagoḍagala, by the same Raṭémahatmayá.

Uncertain.—Dumbukaḍuwegala, by the same Raṭémahatmayá. All in the Three Kóralés.

1846.—A kraal near Puttaḷam, organized by Mr. W. Morris, the Chief Officer of the District. Tennent's *Natural History of Ceylon*, p. 235.

1847.—At Nellugolla, Kurunẹgala District, during the Government of Lord Torrington. *Tennent*, vol. 2, p. 344 *et seq.*

In the latter forties.—At Kuruganmódaragala, organized by Iddamalgoḍa Basnáyaka Nilame and Eknẹligoḍa Dissáwa.

In the fifties.—At Halpegala, by Iddamalgoḍa Basnáyaka Nilame.

Do.	At Karandanagala, by Iddamalgoḍa Basnáyaka Nilame.	
Do.	At Kahanatugala.	All by the same chieftain, in the Sabaragamuwa District.
Do.	At Galahíngala.	
Do.	At Niriẹllagalla.	
Do.	At Millantiyegala.	

1850.—At Hatnagoḍagala, by Ẹhẹliyagoḍa Dissáwa.

Uncertain.—At Yagamagala, by the same Dissáwa.

1857.—At Nellugolla, on the banks of the Kimbulwána-oya, Kurunẹgala District, during the administration of the North-Western Province by Mr. E. L. Mitford, the first Englishman to travel overland to Ceylon.

1859.—Nellugolla, Kurunẹgala District.

1860.—Ruwangirikanda, Kurunẹgala District. Resulted in a *fiasco*, the elephants breaking through the line of beaters and retreating to the forest. Some German Princes were among those present at the kraal, and the disappointment of the chase was made up for by the arduous work which the extinguishing of a big conflagration afforded them, their shelter taking fire.

In the sixties.—At Kewiliẹla-galaturegala, in the Ratnapura District, organized by Iddamalgoḍa Basnáyaka Nilame.

1862.—Dumbaragala, in the Ratnapura District, got up by Hon. W. Ellâwala.

1863.—Ebbawalapiṭiya, Kurunẹgala District. Sir (then Mr.) Richard Cayley contributed charming letters to the *Ceylon Examiner* descriptive of the kraal.

1864.—Mahallegalla, in the Three Kóralés, undertaken by Ẹhẹliya-goḍa Dissáwa.

Uncertain.—Mahiṇkandegala, by the same Dissáwa.

Uncertain.—Maldeṇiyegala, by Mahara Raṭémahatmayá.

1865.—Ayagamagalla, in the Ratnapura District, by Hon. W. Ellâwala.

1866.—Nellugolla, Kurunẹgala District. The late Mr. A. M. Ferguson, C.M.G., Senior Editor of the *Ceylon Observer*, represented that paper, and his letters from kraal town were deliciously graphic. See the appendix to his "Souvenirs of Ceylon." Sir Hercules Robinson (afterwards Lord Rosmead) was present; also Sir Bartle Frere, then on a visit to the Island. One of the captives was, in honour of the Governor, named *Hercules*.

For a reference to this kraal see *The Antipodes and Round the World; or Travels in Australia, New Zealand, Ceylon, China, Japan, and California*, by Alice M. Frere (Mrs. Godfrey Clerk). Second edition, 1870, pp. 185 *et seq.* The authoress (who was accompanied by her father, to whom she dedicates her book, and was the guest of Governor Robinson), had to leave before the kraal took place. She writes: "It came off the day after our departure, but was considered a great failure, as only five elephants were kraaled that day instead of thirty. A few more were taken the next day, but the sole excitement appeared to have been the escape of one of the tame elephants from his mahout, who, after rushing about for some time in the crowd, was kraaled with the wild ones." (Page 191.) Not the mahout, but the tame elephant!

1870.—Kraal at Ebbawalapiṭiya, Kurunẹgala District, in honour of the Duke of Edinburgh. Capper's *Duke of Edinburgh's Visit to Ceylon* contains a graphic account. At Labugama, Ratnapura District, a kraal was got up in honour of the Duke by the Hon. W. Ellâwala, Iddamalgoḍa Basnáyaka Nilame, and Eknẹligoḍa Dissáwa.

In the seventies.—Véragamagala, Ratnapura District, organized by Hon. W. Ellâwala.

1871.—Talapatgulagala, Ratnapura District, by Hon. W. Elláwala.

1871.—At Tiheragama, in the Kurunẹgala District, organized by Kadigáwa Raṭémahatmayá, and abandoned owing to some disagreement among his *confrères*, and the manifestation of ill-omens, one being that the palanquin which conveyed Kadigáwa, on his return after supervising some work connected with the stockade, collapsed.

1875.—At Dehiowiṭa, on the occasion of the visit of H. R. H. the Prince of Wales, managed by the above three Chiefs. On this occasion the Prince of Wales presented a medal apiece to Mahawalaténna Raṭémahatmayá and Eknẹligoḍa Dissáwa, the Prince himself pinning the medals to the breasts of these chieftains.

1882.—Magatẹnna, managed by the above three Chiefs on the occasion of the visit of the Dukes of Clarence and York.

At Vévila.—By private funds of the Raṭémahatmayá of Ratnapura and managed by Hon. W. Elláwala, Eknẹligoḍa Dissáwa, and Mahawalaténna Raṭémahatmayá.

1883.—Niriẹllagalla, by Hon. W. Elláwala and Iddamalgoḍa.

Niriẹlla, by Iddamalgoḍa Kumárihámi.

Kukul Kóralé, by Iddamalgoḍa Kumárihámi and Delwala.

Panamuregala, by Maduwanwala and Elláwala. All in the Ratnapura District.

1889–1898.—Seven kraals were held during this period at Panmuregala, by Maduwanwala and Elláwala.

1884.—Ebbawalapiṭiya, Kurunẹgala District. The late Sir William Gregory was the guest of the Governor, Sir Arthur Gordon (now Lord Stanmore). The former contributed an admirable paper on "Elephant Kraals" to *Murray's Magazine* for September, 1889, in which the function is graphically described.

1886.—Kaikáwala, Kurunẹgala District. An excellent account from the pen of Mr. S. M. Burrows, C.C.S., appeared in *Macmillan's Magazine* for January, 1888, under the title of "Something like a bag : some experiences of an Elephant Kraal in Ceylon."

1896.—Ebbawalapiṭiya, Kurunẹgala District. For an account by the annotator see *Cey. Lit. Reg.* iv., p. 194 *et seq.*

[21] "*Mischief-makers*," *Ronkedoor*, corresponds to what is popularly known as "rogue" elephant. *Cf.* Wolf's *Life and Adventures*, pp. 31–164 : a male elephant who quarrels about the females "is beat out of the field and obliged to go without a consort ; he becomes furious and mad, killing every living creature, be it man or beast—and

in this state is called *Ronkedor*, an object of greater terror to a traveller than a hundred wild ones." Portuguese *Roncador*, "snorer." This is the term given by the Dutch to the "rogue" (*afgeslagen*, deserted and cast away) elephant. See Haafner *Reize tevoet door het Eiland Ceilon* (2ne druk), xix. and 52; *Wolfs*, p. 108.

[22] Those who obtained recruits for the service of the Dutch East India Company were also called by this name.

[23] *Cornax*, Sin̥. *Kurunáyeka:* from *kuru*, "elephant," *and nayaka*, "chief." See also *Haafner*, p. xiv. See Tennent's *Wild Elephant*, p. 122.

Most of the elephant-keepers belong to the Kuruvi class, which is a distinct caste. There are, of course, exceptions. "The Gajanáyaka Nilame" (Elephant chief), as Davy points out, was the first officer of the household department. His duty was to superintend the people who had charge of the royal elephants, of whom a register was kept by a subordinate officer called the "Cooroonee (Kuruvi?) lékam." I believe "Kuruvi Mudaliyár" is a well-known title in the low country. In the south, the title, I have been informed, fell into disuse after the elephant hunts were abolished in that division of the Island. Tennent speaks of the "Cooroowe Vidahn," or "the head of the stables," standing in front of the wild elephants holding a long stick with a sharp point.

The iron hook is called in Sin̥halese *henduwa* or *ankusa* (according to *Haafner*, p. xix, *ankosjh*), which is said to be fashioned after the claw of the fabulous monster *Etkandalihiṇiyá*, the greatest enemy of the elephant, who carries off ten of them at a time hooked to his powerful talons. In Oriental poetry it is written that the nose of a pretty woman should be like an *ankusa!*

Kornak.—Mr. A. E. Buultjens kindly furnishes me with the following note:—"This word is explained in an account of elephants appearing in J. C. Wolf's *Reyze naar Ceylon*, s'Gravenhage, 1783, where, at page 112, it is clear that the 'Kornak' was the hunter or driver who sits on the tame elephant with his hook, with which he directs the head of the beast on the way it should go. Kornak = jaager = driver or huntsman."

[24] See *Wolfs*, p. 115. See also *Memorie* (December 3, 1679) of Van Goens to Macare.

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5. THE CHAIRMAN asked if they could ascertain the distance the elephant was said to go in a day. The Paper just read gave the distance as eight or nine miles: it might be a misprint for eighty or ninety.

6. The following Paper was then read by the author:—

Soldaten, ende hun [illegible] mette abandonneeren, dierck vant
de ordinarij vergunninge der [illegible] [illegible] inde quartieren vande landen
vandat Eylandt, ook [illegible] dat [illegible]
sal partij nae Columbo, [illegible] [illegible]
de consideratie vande particuliere vrientschap, ende goede
correspondentie, dewelcke dat van [illegible] [illegible]
te [illegible], ende van [illegible] [illegible] [illegible] Arro-
[illegible] bedat Eylandt sal sonder de minste [illegible] van sant
Thomas ende van andere quartieren, den [illegible] [illegible]
[illegible] eenige [illegible] Portugeesen met hunne [illegible]
ende eenige [illegible], [illegible] [illegible] mette
soldaten, [illegible] [illegible], [illegible] eenige
landen [illegible] [illegible] ende [illegible], ende
dat [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] van [illegible] Eylandt [illegible] sal [illegible] [illegible]
[illegible] [illegible] van Manar, [illegible] [illegible]
natureelen ([illegible] [illegible]) [illegible]
[illegible] in Allemanien, ommodat [illegible] dat [illegible] grootelijcx
[illegible] ende [illegible] de Conclusie vande Conquista
[illegible] het principael [illegible] [illegible] dat
[illegible] importantie [illegible] sal [illegible] is [illegible]
[illegible] [illegible] ende [illegible] ende van [illegible] [illegible]
is, ende [illegible], [illegible] particulierlijck
[illegible] [illegible] [illegible] Madera adi 29 Januarij
Aº 1653. onderteeckent de Coninck [illegible]
[illegible] capiteyn generael vande Conquista van Ceylon
Amrique de Souza [illegible] [illegible] [illegible] [illegible]
Coninck [illegible] Hieronimus van Azevedo
capiteyn generael vande Conquista van Ceylon

[illegible]

BRITISH MUSEUM NATURAL HISTORY

BRITISH MUSEUM NATURAL HISTORY

Jonker Geronimo van Azevedo, Ick den Coninck doe u seer
groeten, by 't brieff, die ghy 't voorleden Jaer quaemt met dese
hebbe gesien hoe ghy seght, gedaen te hebben inde conquis-
ten vant Eylandt van Ceylon, naer de rebellie vande inge-
boren naturelen vandien, ende de stadt die ghy belegert naer de doot
vanden Tyran Jonckheer van Candia, ende van gelycke
ghy gedaen hebt, geweldich gout ende van [illegible]
rebellen van 't eylandt, die de stadt van Columbo ende [illegible],
het fort van Galo, ende van andere [illegible] omme
[illegible], te weten al het correspondeerende met
[illegible] opinie ende satisfactie [illegible] persoone [illegible]
ende [illegible] ende [illegible] dan [illegible] ons [illegible]
ende [illegible] van dat Eylandt [illegible]
stadt [illegible] my [illegible]
[illegible] conquesten [illegible]
[illegible] (my conformeerende [illegible]
[illegible]) dat [illegible] conquesten [illegible]
[illegible], ende also schryve ick aende Viceroy, [illegible]
[illegible] ende [illegible] in alles, [illegible]
saken [illegible] ende dat [illegible]
[illegible] sal procureren, [illegible] particulierlyck [illegible]
[illegible], ende [illegible]
commandeeren [illegible], dat [illegible]
[illegible] ende [illegible]
[illegible] dat ick [illegible]
[illegible] ende [illegible] om
[illegible] soo [illegible]
mogelick sal wesen, ende [illegible] van [illegible]
[illegible] uytvoeringe ende presenten sal [illegible]
[illegible] vande conquesten, [illegible]

Gol

DON JERONIMO DE AZEVEDO,

Governor of Ceylon from 1594 to 1611 A.D.

By A. E. Buultjens, B.A. Cantab.

[This Paper is based on a Dutch manuscript* of the early part of the seventeenth century, purchased by me in Holland. The manuscript is a translation into Dutch of a Portuguese despatch from Philip III., King of Spain, to Don Jeronimo de Azevedo, Captain-General of the Conquest of Ceylon.† The internal evidence as to the style of writing and the formation of the letters points to the manuscript being genuine and contemporaneous. The manuscript, with my transcription and translation, has been submitted to Dr. W. G. Vandort, Mr. Freüdenberg the German Consul, Mr. F. H. de Vos, and to Mr. R. A. Wennink, the Dutch Consul, and I gratefully acknowledge my thanks for their corrections and suggestions. The revision by Mr. de Vos has been specially useful to me in the final preparation of the Paper.]

Transcription.

Joncker Geronimus van Azevedo, Ick den Coninck doe u hartelyck groeten, by u brieven, die het voorleden jaer quaemen met de schepen, hebbe gesien sulcx ghy segt, gedaen te hebben in de conqueste van het eylandt van Ceylaon, naer de rebellie van de ingeboren oft naturellen van die, ende de staet der selver naer de doot van den Tyran Joncker Jan van Candia, ende van gelycke sulcx ghy gedaen hebt, gewaerschout zynde van twaelff schepen der rebellen

* See lithographed plate.

† The corresponding letter to the Viceroy, Dom Martim Affonso de Castro, in Portuguese, appears in *Documentos Remettidos da India*, tomo 1, pp. 113, 114.

van Hollandt, die de stadt van Columbo opeyschten en het fort van Gale, ende van andere vier die daernae om de streeck ghehouden hebben, 't welck alles is corresponderende mets opinie ende satisfactie die ick van uwe persoone hebbe ende den yver ende dapperheyt daer mede ghy ons dient, ende naedemael de zaeken van dat eylandt soo different stant hebbe vercregen, buyten 't eene my was geadverteert doens ick belastede met de conqueste stiltestaen, oft de conqueste te suspenderen, vindet seer goet (my conformerende met uw goetduncken oft advys) dat deselve conqueste gevordeert werd. Ende alsoo scryve ick aen den Viceroy, ende belaste hem deselve te voorderen ende te helpen in alles, soo veel de saeken aldaar 't selve sullen toelaeten ende dat hy de conclusie van die sal procureren, waerom ick particulierlyck van u het effect van desen verhope, ende desen volgende recomandere ick u seer ernstelyck, dat ghy dese zaeke wilt behertighen ende tot uwe last nemen, houdende u voorsekert, dat ick tot dien respect 't selve sal tot mynen dienst nemen, ende rekenen sulcx ghy daerhinne sult doen, om daer voeren u grootelick te eern ende begiften soo belaest mogelick sal wesen, ende alsoo den Bischop van Cochin met syne authoriteyt ende presentie sal behulpelick wesen tot de zaeken van de conqueste, animerende de soldaten, ende hun persuaderende met avancementen, die ick boven de ordinary van hunne depechen sal doen in de repartitie van de landen van dat eylandt, ick screyve hem dat hy tot dat effect sal passeren naer Columbo, my oock daer toe moverende de consideratie van de particuliere vrintschap, ende goede correspondentie, die ick verstaen hebbe tusschen u beyden te wesen, ende van gelycks belaste ick aen den Viceroy dat hy op dat eylandt sal senden de meeste Christenen van Sant Thomas ende van andere quartieren, die hy sal connen becommen beneffens eenighe getrouwde Portugeesen met hunne vrouwen ende eenighe wees meyskens, om aldaer te trouwen met soldaten, die my aldaer dienen, onder hun deelende eenighe landen daermede zy hun behelpen ende onderhouden connen, ende dat hy ter executie sal stellen

sulcx ick geordoneert hebbe belanghende een armey van ses fusten die ick begeer aldaer op de custe van het eylandt haer sal onthouden daerhinne geadveerten* drye fusten van Manar, omme de ingeborenen oft naturellen (die buyten onse obedientie staen) de comercie ende handelinge in alle manieren, omme dies wille dat dit grootelick sal helpen ende facilitern de conclusie van de conqueste hoewel het principael betrouwen 't welck ick hebbe dat deselve in corten tyt geeyndicht sal worden, is in uwer yver clouckheyt ende verstant ende van sulcx gedaen is, ende mocht voertduren sult my seer particulierlyck advertern.

Gescreven tot Madrid adj 27 January a° 1607. Onderteekent den coninck noch lager voor den Capiteyn-Generael van de conqueste van Ceylaon. Anrique de Sousa op de superscriptie stont by den coninck den Joncker Geronimus van Azevedo Capiteyn-Generael van de Conqueste van Ceylaon.

Translation.

To Don Jeronimus de Azevedo.

I, the King, send you hearty greetings.

By your despatches which came last year with the ships, I have seen what you say has been done regarding the conquest of the Island of Ceylon, after the rebellion of the inhabitants or natives of it, and their condition since the death of the tyrant Don Jan of Candia, and also of what you have done on being advised of the twelve ships of the rebels of Holland, who demanded the city of Colombo and the fort of Galle, and of the other four ships which afterwards cruised about the coast. All this corresponds with the opinion and satisfaction which I have with regard to you, and the zeal and valour with which you serve us. And since the affairs of that Island have taken so different a turn from what was reported to me when I ordered the cessation or suspension of the conquest, it seems quite

* This is Mr. de Vos's reading. Mr. Freüdenberg reads *geadverteert*.

right (agreeably with your recommendation and advice) that the same conquest should be proceeded with. And therefore I write to the Viceroy* and order him to promote the same, and to help you so far as circumstances there will allow, and that he will procure the conclusion of it. Wherefore I particularly expect from you the accomplishment of this ; and after that I recommend you very earnestly to keep this matter in mind, and take it to your charge, resting assured that in respect to it I shall take the same to my consideration, and reckon as you shall act therein, so as greatly to honour you for it and reward you should you possibly be burdened. And as the Bishop of Cochin, with his authority and presence, will be helpful in the affair of the conquest, by encouraging the soldiers and by persuading them with advancements, which I shall grant over and above their ordinary incomes in the distribution of the lands of that Island, so I write to him that he shall proceed for that purpose to Colombo. And I am urged the more to this step in consideration of the particular friendship and good understanding which I have heard exist between you two. And likewise I order the Viceroy that he shall send to that Island as many Christians from St. Thomas and from other places as he shall be able to get together, besides some married Portuguese with their wives, and some orphan girls who might marry there with the soldiers who serve me there, allotting to them some lands whereby they may help and maintain themselves. And that he shall carry into execution what I have ordered with regard to a fleet of six ships which I desire should be stationed there on the coast of the Island, he will keep there the three ships from Manaar referred to, in order to prevent the natives (who stand beyond our jurisdiction) from commerce and trade in every respect, as this will greatly help and facilitate the accomplishment of the conquest. But the chief confidence which I have, that this will be completed in a short

* See *ante*, p. 201, note †.

time, is in your zeal, courage, and discernment, and you shall advise me very particularly of what is done and what may continue.

Written at Madrid on the 27th January in the year 1607. Signed below, "The King," still lower, "To the Captain-General of the Conquest of Ceylon." "Anrique de Sousa" stands at the end of the superscription by the King to Don Jeronimus van Azevedo, Captain-General of the Conquest of Ceylon.

Life of Don Jeronimo de Azevedo.

(1) Spilbergen's 't Historiael Journael van de Voyagie gedaen in de Jaren, 1601–1604, p. 38.

(2) Baldæus' Naauwkeurige Beschryving van het machtige Eyland, Ceylon. Published 1672, pp. 14, 16, 17, 21, 22.

(3) Constantine de Sá's Account in Journal, C.B.R.A.S., vol. XI., pp. 432, 466, 487, 493, 553.

(4) Tennent, vol. II., p. 23.

(5) Dutch Manuscripts, dated 1607.

(6) The voyage of François Pyrard, *Ceylon Literary Register*, vol. IV., 1, p. 5.

(7) Faria y Souza, by Stevens, III., pp. 72, 95, 98, 108, 167, 277.

(8) *Monthly Literary Register*, vol. IV., No. 9, September, 1896.

Jeronimo de Azevedo, or d'Oviedo as he is called by Baldæus, was a native of Beyra in Portugal, of noble extraction, and of an accomplished family. When quite young he went to India, served first as a private soldier with very little assistance from his parents, and by his own merits gradually rose to be Admiral at Malacca in 1585, Governor of the Island of Ceylon in 1594, and twentieth Viceroy of India in 1612. (3)

[1590.] Four years prior to his arrival the Portuguese had sustained a severe defeat at the battle of Balana, about four miles from Kandy. Their General, Pedro Lopez de Souza, and several soldiers, had been slain, and Dona Catharina, the captive princess of the Siṇhalese dynasty, taken prisoner by the warlike leader of the Siṇhalese army, Don Joan of Austria, who after this victory ascended the throne in 1592 as Wimala Dharma Suriya Adascyn. (2)

[1592.] This king, referred to in the manuscripts and in Baldæus as Don Jan, married Dona Catharina, expelled the Portuguese from

the Kandyan Provinces, and built several forts and castles to guard his kingdom. (2)

[1594.] Despatched by Philip III., King of Spain and Portugal, with orders to re-conquer the kingdom of Kandy, Don Jeronimo de Azevedo arrived in Ceylon in 1594 with the title of General of the Conquest in Ceylon, and accompanied by a large force, including many cavaliers and fidalgoes (nobles) from Goa and other places. After various designs and fruitless attempts to regain Kandy he marched as far as Balana in 1601 and encountered the forces of Wimala Dharma I. Long and fiercely did the battle rage, but at last Don Jeronimo was surrounded with his men and was defeated like the General Lopez. However, he succeeded in keeping his men together in order and in retreating to Colombo. Here he was regarded with great honour in that he had brought most of his men in safety after fighting for five days. (1)

[1602.] After this defeat the Portuguese no longer fought with troops against the King of Kandy, but daily they made their defences with trenches and earthworks. The trenches of the king and of the Portuguese were about a mile, and some about half a mile* from one another. Frequently were sallies made and plans tried by the one to dislodge the other. About eight months after this, on Easter day in 1602, there came over to Colombo Emmanuel Dias, who when a young man had been taken prisoner by the king in the time of General Lopez, and had remained serving in Kandy as a great Mudaliyár. He again escaped to Colombo and revealed to Don Jeronimo de Azevedo many designs to murder the King of Kandy. He was very welcome and received great credit. His ears had also been bored in the manner of the Sinhalese. This Emmanuel Dias had planned to carry out a double game. He made an agreement with Don Jeronimo and swore upon a silver cross brought before him that he would go with five other Portuguese, viz., the three captains (Christiæn Jacomo, Albert Primero, and Jan Pererro †) and two other soldiers, to Kandy and deliver them over to the king to serve him, but that on a favourable opportunity they would murder the king. The promise was made that after Don Jan's death Emmanuel Dias should, for the performance of his work, come into possession of the whole Island. Thereupon Emmanuel Dias received a large sum of money in order the more easily to bring over the people to his side, and solemn promises were made upon oath a second time upon a silver cross before he departed to Balana, saying he would feign he had again escaped from Colombo because of the ill treatment of the Portuguese. (1)

But he went to Kandy and made known to the king everything which had transpired with the General Don Jeronimo, viz., that the General would conceal a troop of Portuguese soldiers near the fortress of Balana,

* A Dutch mile is equal to about four English miles.

† Casper Perere.—*Baldæus*.

so that as soon as the murder of the king was accomplished they would storm that fort. To this end had the Portuguese above-named come in order to help to murder the king at a good opportunity when he was asleep.

At night the king went in person with a large number of his best soldiers and entered into the fort of Balana. When the five Portuguese arrived there, they were joyously received by Dias, brought before the king, taken prisoners, and bound. Then a musket shot was fired from the fort as a signal, to those who lay in ambush, that the murder was accomplished, and they went in haste towards the fort. (1)

But a fugitive warned the Portuguese soldiers of what had occurred, and in great confusion they retreated again to Colombo, having suffered much hardship and lost all their baggage. The five Portuguese had with them very sharp Japanese knives called *trassadoes*, with which they intended to kill the king. They were sitting in Kandy in durance vile, while the king was relating all this to our General Joris van Spilbergen, to whom the king presented one of these Japanese *trassadoes*. (1)

[1603.] Wimala Dharma Suriya sought the aid of Sebald de Weerdt, Vice-Admiral of the Dutch fleet of seven ships, which arrived at Batticaloa against the Portuguese. The plan was that De Weerdt should attack Galle by sea, and the king should besiege it by land. This design was frustrated by the murder of De Weerdt at Batticaloa. (1)

[1604.] Soon after Wimala Dharma Suriya died, in 1604, and was succeeded by his stepbrother Seneviratna, who married Dona Catharina. The Portuguese were very glad about the death of the Emperor Don Jan, and sent several letters to Goa to inform the Viceroy of it and invade the whole Island. (2)

[1607.] Affairs were in this state when the letter from Madrid, dated January 27, 1607, was written to Don Jeronimo de Azevedo, ordering the conquest of the Island.

[1611.] Of the Portuguese General Don Jeronimo little more is known. Tennent calls him "a soldier less distinguished for his prowess than infamous for his cruelties." In the account of the war of Constantine de Sá in Ceylon we learn that "after ruling Ceylon for eighteen years with fitful fortune Don Jeronimo passed to the superior grade of Viceroy of India, where he served the State's interests better than he did his own; for having to compete against the general opinion that he was rich, he gained when young the good fortune he deserved when old, being at that time spoken of as avaricious. He comported himself with great wisdom and circumspection, but in reward for all his services he died a prisoner in Lisbon Castle, apparently as an offender for the many misdeeds which his numerous enemies had laid to his charge." Faria y Souza says his reverses were a judgment from the Almighty for his barbarities in Ceylon. François Pyrard, the French writer, calls him a very good Captain, but

Mr. Gray's note to this is that "Pyrard was probably but a short time in Ceylon, and some soldier may have described this inhuman monster as a very good captain. His character may be estimated by his deeds, which included the tossing of Siṇhalese to alligators to amuse his troops, forcing mothers to pound their children, and other enormities."

7. The CHAIRMAN inquired where "Balana" mentioned was?

Mr. BUULTJENS said that he believed it was near Kadugannáwa. He did not know by what name it was known in the present day.

It was remarked that perhaps the present Balana Telegraph Station on the railway incline beyond Alagalla was the place.

The CHAIRMAN said no doubt it was so. It appeared that the Portuguese attempted to take Kandy by the same road by which it was ultimately taken by the British, and across which their railway was now laid.* Of what description were the Japanese knives called *trassadoes* used by the five Portuguese, who intended to kill the Siṇhalese king by treachery?

Mr. BUULTJENS said he could not get any information about the knives except that they were Japanese.

It was suggested that the word *trassadoe* was Portuguese, such knives being known in Goa.

The CHAIRMAN then pointed out that the *Mahúwaṇsa* gave the accounts of the attacks of the Portuguese just a little after the reign of the king mentioned. It went to show that in these days certain merchants traded in Colombo, and those men were called *Parangis*, &c., the Portuguese.

8. Mr. GREEN proposed, and Mr. E. R. GOONERATNE seconded, a vote of thanks to the writers of the Papers.

The CHAIRMAN supported the resolution, which was cordially passed.

9. A vote of thanks to the Chair concluded the proceedings.

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* See "Report on the Kẹgalla District," Sessional Paper XIX., 1892, p. 39, "Balana."—*Hon. Sec.*

COUNCIL MEETING.

Colombo Museum, September 15, 1898.

Present:

Mr. Ferguson in the Chair.

Mr. P. Coomáraswámy. | Mr. A. Haly.

Mr. F. C. Roles, Honorary Treasurer.

Mr. J. Harward, Honorary Secretary.

Business.

1. Read and confirmed Minutes of Council Meeting of July 4, 1898.

2. Owing to the absence of Mr. Senáthi Rája, his motion, "That the General Meetings of the Society be held hereafter at 5 P.M. instead of 9 P.M.," was not brought forward.

3. The following Member was elected as a Resident Member of the Society:—

Dr. V. R. Saravanamuttu, Colonial Surgeon, recommended by { Dr. W. G. Vandort. Mr. G. A. Joseph.

4. Laid on the table two letters from Mr. H. O. Barnard and M. K. Saldin & Co., Colombo, in reply to Honorary Secretary's letters with regard to the estimate for reproducing the illustrations for Mr. F. H. de Vos's Paper entitled "Monumental Remains of the Dutch East India Company in Ceylon."

Resolved,—That Saldin & Co.'s estimate for lithographing the plates for Mr. de Vos's Paper be accepted, and that the question of reading the Paper be decided by the President of the Society and the Secretaries.

5. Mr. Haly's offer to make a list of periodical literature in the Society's Library which might be disposed of, was accepted.

COUNCIL MEETING.

Colombo Museum, October 18, 1898.

Present :

The Lord Bishop of Colombo, President, in the Chair.
The Hon. Mr. Justice A. C. Lawrie, Vice-President.
Mr. J. Ferguson. | Mr. A. Haly.
Dr. W. G. Vandort.
Mr. F. C. Roles, Honorary Treasurer.
Mr. J. Harward and Mr. G. A. Joseph, Honorary Secretaries.

Business.

1. Read and confirmed Minutes of Council Meeting of September 15, 1898.

2. Laid on the table the following Papers :—

(1) "Notes on *Dipterocarpaceæ*, both as regards the Ceylon members of the order and general distribution," by Mr. F. Lewis.

(2) "A translation from the Dutch relating to the Expedition to Kandy of Lubbert Jan Baron van Eck, Governor of Ceylon, 1763–1765," by Mr. A. E. Buultjens.

Resolved,—That the first Paper be referred to the Hon. Mr. Justice A. C. Lawrie and the second one to Mr. H. C. P. Bell, for their opinions respectively.

3. Laid on the table Mr. Haly's Report on books in the Society's Library which he recommends should be dispensed with.

Resolved,—That Messrs. Harward, Haly, and Dr. Vandort do form a Sub-Committee, and that they do select such books as they would offer to other institutions, but that no books be destroyed ; and that the same Sub-Committee do report on the present exchange list, with a view to stopping further exchange with Societies whose publications are considered unsuitable.

4. Laid on the table a letter from the Royal Geographical Society of Australasia asking for an exchange of publications, and fowarding a set of their publications (containing eleven volumes).

Resolved,—That the matter be referred to the above Sub-Committee for report.

5. In the absence of Mr. Senáthi Rájá, Mr. Roles proposed the following motion, which stood in Mr. Senáthi Rájá's name: "That the General Meetings of the Society be held hereafter at 5 P.M. instead of 9 P.M."—Mr. Haly seconded.

The motion on being put to the vote was lost.

6. The Honorary Treasurer submitted a list of Members in default with their subscription.

Resolved,—That the Honorary Treasurer be authorized to strike off from the Roll the names of those Members who shall not have paid by the end of the year.

COUNCIL MEETING.

Colombo Museum, November 16, 1898.

Present:

The Lord Bishop of Colombo, President, in the Chair.

Mr. Staniforth Green, Vice-President.

Mr. P. Coomáraswámy.	Mr. F. C. Roles.
Mr. J. Ferguson.	Mr. E. S. W. Senáthi Rájá.

Mr. J. Harward and Mr. G. A. Joseph, Honorary Secretaries.

Business.

1. Pending the arrival of the President, Mr. S. Green, Vice-President, took the Chair.

2. Read and confirmed Minutes of Council Meeting held on October 18, 1898.

3. Elected the following Candidates as Resident Members of the Society:—

C. E. Haslop:	recommended by	S. Green. F. M. Mackwood.
R. M. John:	do.	S. Green. J. H. Renton.

4. Laid on the table Circular No. 208 of October 18, 1898, containing Mr. F. Lewis's Paper on *Dipterocarpaceæ*, together with the Hon. Mr. Justice A. C. Lawrie's opinion thereon.

Resolved,—That the Hon. Mr. Justice A. C. Lawrie's suggestions be adopted, and that Mr. Lewis be informed that the Council thank him for forwarding the Paper to the Society, but are unable to accept it, because the Ceylon members of the order are fully treated in Dr. Trimen's Flora of Ceylon, and a comprehensive treatment of the order as a whole does not come within the scope of the Society's work.

5. Laid on the table letter from the Geological Survey of Canada, asking for back numbers of Journals of the Royal Asiatic Society, Ceylon Branch.

Resolved,—That the Geological Survey of Canada be informed that it is not the custom of this Society to supply back numbers to other Associations, and that the Society would prefer to abide by this custom; but that copies of back numbers are to be purchased from Messrs. A. M. & J. Ferguson, the local agents, or of Messrs. Luzac & Co., London.

6. Laid on the table Colonial Secretary's letter of October 27, forwarding a Pamphlet containing Papers on the custom of Polyandry as practised in Ceylon (together with a copy of a memorandum received from the Premier of Melbourne), and suggesting that the information therein contained be incorporated in the Society's Journal.

Resolved,—That the matter be referred to the President and Mr. J. Ferguson for their opinions, and that in the event of a favourable report from these gentlemen, the Papers be published accordingly in the Journal.

7. Laid on the table Circular No. 209 of October 19, 1898, containing a translation from the Dutch, by Mr A. E. Buultjens, relating to the Expedition to Kandy of Lubbert Jan Baron van Eck, Governor of Ceylon, 1763-1765, referred to Mr. H. C. P. Bell for his opinion.

Resolved,—That Mr. H. C. P. Bell's suggestions be accepted, and that Mr. Buultjens be asked to carry them out.

8. Laid on the table Report of the Sub-Committee appointed to deal with the question of books and exchange.

Resolved,—That the Report be adopted.

MONUMENTAL REMAINS OF THE DUTCH EAST INDIA COMPANY IN CEYLON.*

By F. H. DE VOS, Barrister-at-Law.

THE title of this Paper has been suggested by that very interesting work entitled *The Monumental Remains of the Dutch East India Company in the Presidency of Madras*, by Alexander Rea, published by the Government of India.

In Ceylon, as in India, these remains consist in the main of tombstones, many of which have coats of arms engraved on them. To merely collect epitaphs and publish them with their translations, although useful in its way, will not, however, be doing justice to the subject, and I have therefore decided to treat the matter more fully from a genealogical and heraldic point of view. Before I proceed to discuss these tombstones, it is necessary that I should make a few prefatory observations of a general nature.

It should be noted that in the coats of arms on the tombstones in Ceylon the colours are rarely indicated. Sometimes we find the impalements and quarterings reversed, due to the engraver copying from a seal and not from its impression. That some animals are shown *contourné* is also due to this cause. The stonecutters in the Dutch times had doubtless in most cases to rely on the recollection of parties for descriptions of their coats of arms. Hence it is that, in some instances, the charges are scarcely recognizable. Arms were

* See paragraph 4, page 209, *ante*. It was decided that this Paper be printed, but not read.

sometimes impaled *per fess*, and crests are placed over the coats of arms of ladies—a heraldic anomaly.

As regards the Siṇhalese, it would not be quite correct perhaps to say that they had no system of heraldry. No doubt it did not obtain among them in the sense generally understood in Europe, but we have it on the authority of François Valentyn* that the respective castes were distinguished by the flags they carried, on which distinctive devices were charged. Thus, the "Visschers" (Fishers) carried a white flag with a fish charged thereon. Those belonging to the *Magoel Doerawo* and *Nattanbowo* castes carried a white flag called an *Addealanchody*, with a red lion as its charge. The *Navandannajo* used a flag with an ape depicted on it. But the system in vogue in Europe, by which certain armorial bearings were assigned to and used by certain families, was unknown in the East. It is curious therefore to find in an account given by a Dutch traveller in Ceylon (Dr. Ægidius Daalmans, 1687–89) of the obsequies of the King of Kandy, a description of the coat of arms of the king, which, he says, was "on a field *or* a lion *gules*."†

As regards the Portuguese, J. Ribeyro (Lee's translation, p. 46) says: "There were more than 900 noble families resident in the town of Colombo (1656 A.D.)."

The absence therefore of Portuguese tombstones with armorial bearings on them is remarkable. One, however, has been found bearing the De Fonseca arms, viz., *D'arg. à cinq étoiles 2, 1, et 2.*‡ The Portuguese tombstones were most probably destroyed by the Dutch. This was the case in Jaffna.§ The Portuguese were also in the habit of carrying with them in their ships marble pillars with the arms of Portugal carved thereon, which they set up at every place they conquered.‖ None of these have been discovered in

* "Beschryvinge van het Eyland Ceylon."

† Journal, R.A.S.C.B., vol. X., No. 35, p. 149.

‡ See 2 C.L.R. 358.

§ Journal, R.A.S.C.B., vol. X., No. 39, p. 312.

‖ See 3 C.L.R. 146; 4 C.L.R. 196

Ceylon, although Mr. Bell, the Archæological Commissioner, came across a slab in the Beligal Kóralé bearing the royal arms of Portugal.* The five escutcheons on the shield are placed saltire, but not cross-wise. A similar coat of arms has been recently discovered engraved on a rock in the Colombo Fort, with what looks like the date 1501 A.D. But the Dutch period compensates for any disappointment one may feel at the dearth of Portuguese coats of arms in Ceylon. The old Dutch churches and graveyards are rich in tombstones containing arms engraved thereon with varying degrees of merit.

The late Mr. Leopold Ludovici, in the year 1877, published his *Lapidarium Zeylanicum*, being a collection of the monumental inscriptions on the Dutch churches of Ceylon. The tombstones in the Dutch cemeteries are not included in this collection. In this Paper only the Dutch epitaphs in that work, and those not included therein which have been discovered scattered about the Island, are translated and discussed, and two coats of arms over two English epitaphs are noticed (Rabinel and Mylius).† Besides the verbal inaccuracies in the *Lapidarium Zeylanicum*, the copyist has committed the mistake of using lines for purposes of shading, which are apt to be mistaken for indications of the tinctures. The charges also, in some instances, have not been correctly reproduced.

I have blazoned the arms in French, the language of heraldry. It will be out of place here to discuss the differences between English and Dutch heraldry. The curious reader is referred to J. B. Rietstap's *Handboek der Wapenkunde* and L. Philip. C. van den Bergh's *Grondtrekken der Nederlandsche Zegel-en Wapenkunde* for information on the subject. I have supplied the tinctures from Rietstap's *Armorial Général*. As regards the coats of arms which are not contained in this work, I have not filled in the colours

* Sessional Papers, Ceylon, 1891 : Antiquarian Research, Kęgalla, p. 31.

† "Lapidarium Zeylanicum," Plates 64 and 75.

and metals, as I cannot regard the copyist's lines and dots as indications of them.

It is impossible to find English equivalents for the offices under the Dutch Government. I have therefore not attempted to translate them, nor to present in an English dress the redundant adjectives and honorifics so dear to the Dutchmen of that age.

The monogram of the Dutch East India Company was—

Vereenigde Oost-Indische Compagnie (United East Indian Company). It was adopted on the 24th February, 1603, by a Resolution of the XVII. The letters are blue, on a silver field.

List of Abbreviations.

Acc.	accompagné
Affr.	affronté
Arg.	argent
Arm.	armé
Arr.	arraché
Bes.	besant
Bord.	bordure
Bq.	becqué
Br.	brochant
Brét.	brétessé
Ch.	chargé
Chev.	chevron
Coll.	colleté
Cont.	contourné
Cour.	couronné
Cq.	casque
Croiss.	croissant
C.-brét.	contre-brétessé
Éc.	écartelé
Éc. en saut.	écartelé en sautoir
Eng.	enguiché
Engr.	engrêlé
Ép.	éployé
Ess.	essorant
Fr.-q.	franc-quartier
Gu.	gueules
Iss.	issant
Lamp.	lampassé
Los.	losange
M.	membré
Mouv.	mouvant
Naiss.	naissant
Nat.	naturel
Pass.	passant
Pl. d'aut.	plumes d'autruche
Ramp.	rampant
Reg.	regardant
Renv.	renversé
Sa.	sable
Saut.	sautoir
Sec.	second
Sen.	senestre
Sin.	sinople
Surm.	surmonté
Terr.	terrassé
Trèf.	trèfle
Vir.	virolé

Meanings and English Equivalents of French Terms.

FRENCH.	ENGLISH.
Accompagné	between
Accosté	placed side by side
Adossé	addorsed
Affronté	face to face
Armé	armed
Arraché	erased
Bande	bend
Bande (en)	bendwise
Barre	bend sinister
Becqué	beaked
Besant	bezant
Bourlet	a wreath, generally placed on the top of the helmet and attached to the *lambrequins*, *i.e.*, ornaments to the helmet placed on either side of it
Brétessé	bretissé
Brochant	debruising, oppressing
Chargé	charged with
Chef	chief
Chef (en)	in chief
Colleté	collared
Contre-brétessé	embattled
Coupé	per fess
Dextrochère	arm directed from dexter to sinister
Écartelé	quarterly
Écartelé en sautoir	party per saltire
Elancé	at speed
Engrêlé	engrailed
Enguiché	garnished, see *virolé*
Eployé	displayed
Fasce	fess
Fasce (en)	fess-wise
Fascé	barry
Franc-quartier	quarter
Issant	issuant
Lambrequins	See *bourlet*

FRENCH.	ENGLISH.
Lampassé	langued
Lion léopardé	lion passant
Losange	fusil
Massacre	antlers placed over skull
Membré	membered
Même (du)	of the same, *i.e.*, last-mentioned, tincture
Mouvant	issuing from the side of the shield or ordinary
Naissant	animals with the lower half of the body couped
Pelican avec ses petits	pelican in her piety
Renversé	reversed
Sautoir	saltire
Soutenu	sustained by
Surmounté	having another charge over it
Surtout	an inescutcheon placed over the point of intersection of the quartering lines. It is said to be placed *sur le tout*
Sur le tout	See *surtout*
Sur le tout du tout	This means that the *surtout* is charged with a smaller inescutcheon
Terrassé	placed on a mount
Trèfle	trefoil
Vol	a pair of wings
Virolé	ferruled. Said of hunting horns. See *enguiché*

Plate 3, L.Z., Colombo.*

This epitaph is somewhat obscure, and is an attempt at versification, as the following re-arrangement of it shows:—

HIER N DIT KLEYN VERTREGK
LEYT DEN VERMAERDEN HELT
DIE SCHOLTE DIE WELEER
GLOEKMOEDIGH SLOEGVYTVELT
DEN TROTSEN LVYSATIEN
EN VYT HAER STERGK STEDE
WIENS ZIEL RUST NU BY GOD
IND' AERDE ZYNE LEEDE
GEBOORE DEN XII. NOVEMB:
A° MDCXX: OBYT III. DESEMB.
A° MDCLXXXVI.

Translation.—Here in this small recess there lies the famed hero, that Scholte, who long since vanquished the haughty Lusitanians and drove them out of their fortress. His soul rests with God, his body in the earth.

Arms.—De ... à une grappe de raisin, acc. de quatre feuilles de vigne.

Crest.—Trois pl. d'aut.

Remarks.—The *Beknopte Historie*† speaks of one Captain Marten Scholten, who was sent out (1665 A.D.) with Captain du Pont and the Koopman van Goens to the King of Kandy's territories, to take possession of certain provinces.‡

Plate 4, L.Z., Colombo.

Translation.—Sibilla de Leeuw, died 26th June, 1662.

Remarks.—The De Leeuws were an old family resident in Galle, one of them, Johannes Willemsz de Leeuw, early in the eighteenth century marrying one Sibilla de la Porte.

* L.Z. = *Lapidarium Zeylanicum;* C.L.R. = *Ceylon Literary Register;* M.L.R. = *Monthly Literary Register.*

† Journal, R.A.S.C.B., vol. XI., No. 38, p. 63.

‡ See also 4 C.L.R. 136.

Translation.—Here lies buried the Hon. Hercules Lindeborn, during his life Vry Koopman, Captain of the Burgery, and Vice-President of the Civil College of the City of Colombo. Born at Drontem. Aged 42 years 7 months and 11 days. Died 24th May, 1664.

Arms.—De ... à une arbre terrassé de ...

Crest.—L'arbre.

Remarks.—The same arms are to be found over the grave of two of his daughters in Pulicat.*

Plate 5, L.Z., Colombo.†

Translation.—Here lies buried Juffrouw Adriana Alebos, wife of Floris Blom, Koopman and Secretary of the Government of Ceylon. Born in Tayouan, in the Island of Formosa, on the 13th December, 1656, and died 23rd September, 1684, in the Fort of Colombo.

Remarks.—The coat of arms on the stone by the side of this tombstone is: Parti : au 1 de ... à trois faucons ess. au 2 de ... à trois los. surm. d'une croix latine.

Crest.—Un faucon ess.

The arms of Floris Blom (Plate 79) in nowise resemble these arms, so that the two stones in L.Z., Plate 5, have been accidentally placed beside, and have no relation to, each other. The arms in the dexter impalement, however, closely resemble those on the dexter shield in Plate 51, L.Z.

Plate 6, L.Z., Colombo.

Translation.—Here rest Jacomina Rosegaard and Esther de Sollemne, wives of Ryclof van Goens, Ordinary Councillor of India, Governor of Ceylon, Malabar, and Madura. Died, the former 3rd January, 1667, and the latter 22nd June, 1668.

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* See "Monumental Remains of the Dutch East India Company in Madras" (Rea), Plate 24.

† See Plate 79, L.Z.

Arms.—Parti : au I. coupé : au (1) parti au (*a*) d'or à la demi-aigle mouv. du parti, au (*b*) d'arg. à un cerf ramp. et contourné de gu. au (2) d'az. à un sablier posé en fasce.

Au II. coupé : au (1) parti au (*a*) de ... à un soleil, au (*b*) fascé de ... et de ... de dix pièces, la sixième ch. de cinq maillets, au (2) parti au (*a*) parti au (*aa*) de ... à une fleur-de-lis mouv. du parti, au (*bb*) fascé de ... et de ... de dix pièces, au (*b*) de ... à la barre de ... : au lion de ... broch. sur le tout.

Ryclof van Goens was born at Rees, in the Dukedom of Cleves, on the 24th June, 1619, and was the son of Volckert Boyckes van Goens (born in Friesland in 1572, and died at Batavia, 27th August, 1629), Commandant at Batavia, and Hillegona Jacobsdr. (born at Franekei, and died at Batavia, 25th July, 1630). He left Amsterdam with his parents for Batavia by the ship "Bueren" on the 3rd October, 1628. He conquered Manáar (22nd February, 1658) and Jaffna (21st June, 1658), and was Governor of Ceylon, 1660. Having handed over the reins of Government to Adriaan van der Meyden, 29th April, 1662, he re-entered on the administration on the 12th April, 1663, which he gave up on the 26th November, and resumed on the 19th November, 1664. He returned to the Fatherland as Admiral of the return fleet; arrived in Texel, 29th August, 1682; died in Amsterdam, 14th November, 1682; and was buried in the Klooster Kerk in the Hague, 20th November, 1682.

Ryclof van Goens was married (1) at Batavia, 13th September, 1640, to Jacomina Bartholomeusdr. Rosegaard (widow of Jan Lievens, Provisional Lieut. O. I. C.), born at Leyden, 1616, died at Colombo, 3rd January, 1667; and (2) at Colombo, 17th August, 1667, Ester de Solemne (widow of Dirk van Adrichem, Director of Surat), born in 1640, died at Colombo, 22nd June, 1668, daughter of David de Solemne (who came to the Indies in 1631 by the ship "Wesel"), Captain, Batavia, and Catherine Malbergh. He married (3) in 1668 Johanna van Ommeren, born in 1655, daughter of Rudolp van

Ommeren, Onderkoopman, and Johanna Magnus. By the first marriage he had :—

(1) Volckert, born in Batavia, 22nd June, 1641; died there, 23rd July, 1643.

(2) Ryclof (junior), born in Batavia, 11th June, 1642 (of whom hereafter).

(3) Jacob, born in Batavia, 4th September, 1643; died there, 30th September, 1645.

(4) Volckert, born in Batavia, 20th October, 1644; left for the Fatherland with his father on 28th January, 1655, and remained there for his education. He was a member of the Court of Justice in Batavia, 1677, and left for the Fatherland on the 15th March, 1680. He married Johanna Christina Elizabeth Sas van den Bossche (baptized at Utrecht, 28th December, 1651), daughter of Mr. Gerbrand Sas van den Bossche and Wendelia van den Broeck.

(5) François, born in Batavia, 27th September, 1646; died there, 15th September, 1648.

By his second marriage he had :—

(6) Esther Ceylonia, born in Colombo, June, 1668.

Ryclof van Goens (junior) went out to Holland for his education on the 17th December, 1646, by the ship "Vogel Struys," and was taken into the service of the East India Company as Clerk (1656). Arrived in Ceylon 2nd October, 1658, and studied under the Rev. Baldæus at Jaffna (1659 to 1660). He was a Member of the Council of Justice in Colombo (October, 1662); Dissave, Mátara (1663); Governor of Ceylon, 12th April, 1675, to 3rd December, 1679; and died on his return voyage to Europe on the 14th May, 1687.

Ryclof van Goens (junior) was married (1) at Colombo, 17th March, 1667, to Louisa Brasser (see Plate 52, L.Z.), born at Dantzic, 24th January, 1649, died at Batavia, 21st July, 1680, daughter of Joost Brasser and Perpetua Trouwhart. He married (2) Catherina van Adrichem (who died 1st August, 1687), daughter of Dirk van Adrichem, Director of Surat, and Ester de Solemne.

By his first marriage he had—

(1) Jacob, born in Mátara, 13th December, 1667; died 9th May, 1668; buried in Colombo.

(2) Jacoba Africana, born on board, close to the Cape of Good Hope, 22nd March, 1669; died on board, 8th August, 1669.

(3) Justina, born in Amsterdam, 22nd July, 1670; died on the voyage to the Indies, 29th October, 1670; buried in Colombo.

(4) Johanna Louisa, born in Colombo, 13th August, 1672; died there, 3rd July, 1673.

(5) Ryclof Perpetuus, born in Colombo, 26th August, 1673; died 28th November, 1720.

(6) Louis Justus, born in Colombo, 4th November, 1674; died 1708.

(7) Johanna Jacoba, born in Colombo, 26th August, 1676; died there, 8th September, 1676.

(8) Volkert, born in Colombo, 26th September, 1677; died 13th October, 1727; married Anna Magarita Lutha, who died 21st August, 1763.

(9) Perpetua, born in Colombo, 26th September, 1677; died 4th June, 1761; buried at the Hague, 10th June, 1761; married (1) Jan Reinoud Snevens, Advocate, born in the Hague about 1671, died 1708, son of Isaac Snevens and Elizabeth van der Chys. She married (2) Casparus Clotterbooke, buried at the Hague, 25th December, 1745, son of Casparus Clotterbooke and Eva van Couwenhoven.

(10) Constantia Louisa, born in Colombo, 8th August, 1679; died 29th October, 1759; buried at the Hague, 5th November, 1759; married Cornelis François Duyvensz, buried at the Hague, 15th October, 1759.*

Plate 7, L.Z., Colombo.

Translation.—Here rests Joan van Vliet, during his life Opperkoopman and Chief of Tutucoreen. Born 2nd January

* See 4 C.L.R. 136.

1656. Died 19th August, 1690. Aged 34 years 7 months and 8 days.

Arms.—D'az. à trois lances de tournoi d'arg. posées en barre et rangées en bande.

Crest.—Une lance posée en pal entre un vol d'arg.

Remarks.—Joan was probably the son of Jeremias van Vliet, who on the 15th July, 1642, married Catherina Sweers. One Daniel van Vliet married (1) Catherina Harvaartsz, who, as widow, married, 27th January, 1639, Matthys Hendrik Quast, and afterwards, on the 24th April, 1642, Johannes Lamotius. A Thomas van Vliet, who died in 1684, is buried in the Pettah Burial Ground, Colombo, and the arms on his tombstone are the same as those of Joan.

Plate 8, L.Z., Colombo.

Translation.—Here rests Juffrouw Johanna Margareta Schilhoorn, during her life the good wife of the Onderkoopman Gerrit van Toll. Aged 17 years 9 months and 11 days. Born in Batavia. Died 4th October, 1695.

Remarks.—Gerrit van Toll had two sisters, Dorothea and Elizabeth. The latter married Jacob van Rhee, the first Commandeur of Jaffna.

One Jacob van Toll, an Assistant, who died on the 5th November, 1702, is buried in the Pettah Cemetery, Colombo.

Translation.—Ina van der Hool, aged 22 years, wife of Willem Bosemis. Died 3rd March, 1662.

Arms.—Dexter shield : De ... à un cœur saignant et au canton de ...

Sinister shield : Parti : au 1 coupé : au (*a*) de ... au (*b*) de ... à une ancre : au 2 de ... à une croix latine.*

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* See Plate 97, L.Z.

Translation.—Here lies Sigismundus Monitanier. Aged 12 years 11 months. Died 25th June, 1663 (?)

Remarks.—Perhaps the son of François Montanier.*

Plate 9, L.Z., Colombo.

Translation.—Here lies buried Henrietta van Kriekenbeek, wife of Thomas van Rhee, Extraordinary Councillor of the Indies, Governor and Director of the Island of Ceylon. Died 24th September, 1696. Aged 56 years.

Arms.—Parti : au 1 de ... à trois têtes et cols de cerf, les deux en chef affrontées : au 2 coupé : au (*a*) de ... au (*b*) de ... à neuf coquilles (?) renv. 3, 3, et 3.†

Remarks.—See the Kriekenbeek arms discussed in *2 C.L.R. 364.* Henrietta was the daughter of Rutgerus van Kriekenbeek of Wyk ter Duurstede, who came out to Ceylon in 1659 as a Seur (Clerk) on board the ship "Zeelandia." Thomas van Rhee was also a native of Wyk ter Duurstede.

Plate 10, L.Z., Colombo.

Translation.—Here lie buried Willem van Rhee, Opperkoopman and Chief Administrator of the Ceylon Government, and his wife Catherina Africana van Dielen. The latter born 7th July, 1670, and died 23rd April, 1700 ; the former born 1st December, 1664, died 5th November, 1700.

Arms.—The dexter shield contains the Van Rhee arms as in Plate 9, with the difference that the stags' heads in chief are not affrontées, and the tincture of the shield is depicted gules. Van Dielen : Coupé : au 1 parti (*a*) d'or à un cerf contourné et élancé au nat. broch. sur le fût d'un arbre de sin. terr. du même ; (*b*) de gu. à un agneau pascal pass. d'arg. au 2 d'or au lion couché de gu. arm et lamp d'azur, le tête contourné tenant entre ses pattes une boule d'azur. A la fasce de az. broch. sur le coupé et ch. de trois étoiles d'or.

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* See 4 C.L.R. 136.

† See Plates 10, 47, 82, L.Z.

Remarks.—There was a Willem van Dielen, whose widow. Wilhelmina de Wit, married Jacob Paauw. He was Chief of Masulipatnam.* The Paauws figure also in the Mooyaart pedigree, Anthony Noel Mooyaart, the brother-in-law of Charles Edward Layard, having married at Delft one Petronella Maria Paauw.†

Plate 11, L.Z., Colombo.

Translation.—Hereunder lies the body of Mejuffrouw Abigail Keetlaar, last widow of the Opperkoopman and Dissave of the lands of Colombo, Heer Cornelis Strick, of blessed memory. Born at Ter Goes, in January, 1639, and died 28th February, 1709. Aged 70 years 1 month and 10 days.

Arms.—Vair taillé à cinq carreaux d'arg. rangées en bande.

Crest.—Trois pl. d'aut.

Plate 12, L.Z., Colombo.

Translation.—Hereunder rests the Hon. Mr. Gerrit de Heere, during his life Extraordinary Councillor of the Dutch East Indies, Governor and Director of the Island of Ceylon and the Madura Coast. Died at Colombo, 26th November, 1702. Aged 45 years 8 months and 26 days.

Arms.—De ... à une roue de huit rayons.

Crest.—Trois pl. d'aut.

Remarks.—The widow of Gerrit de Heere (Joanna Maria van Riebeek, daughter of the Director-General Abraham van Riebeek) married at Batavia, 16th November, 1706, Joan van Hoorn, Governor-General of India. On the death, 21st February, 1711, of Joan van Hoorn at Amsterdam, she married, 27th November, 1712, Heer Mr. Cornelis Bors van Waveren, Lord of Leusden, Hamersveld, and Dorckelaar, Schepen and Councillor of the City of Amsterdam, and Director of the West India Company.

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* See "Monumental Remains, Madras" (Rea), Plate 30, where the same coat of arms appears.

† See 2 C.L.R. 183.

Translation.—To the memory of Barbara Margareta Cadensky, wife of the Hon. Adam van der Duym. Born at Cochin, 11th August, 1678. Died 31st March, 1702. Aged 23 years 7 months and 20 days.*

Plate 13, L.Z., Colombo.

Translation.—Here rests Agneta Clara Samlandt, the good and well-beloved spouse of Willem Jacob van der Graaff, Opperkoopman and Second in Authority of the Company's Establishments at Malabar. Born 29th December, 1745. Died 22nd June, 1713 (*sic*).†

Arms.—Van der Graaff : D'arg. à deux fasces brét. et c.-brét. de sa. au franc quartier d'or ch. d'une aigle ép. du sec. Samlandt : De gu. à une poutre d'or en fasce accompagnée de trois colonnes d'or (1 et 2) posées en pal.

There are four side shields, two on each side of the main shields. They contain the following arms :—

Samlandt : already described.

Emans : De sin. à une colonne d'or cassée et tombant vers le flanc, dextre de l'écu, à une colonne du sec. posée en pal. br. sur la portion tombante.

Bierens : D'arg. à trois cloches.

Toorze : Parti : (1) D'arg. à deux coquilles posées en pal, (2) coupé : au (*a*) d'arg. à la fasce brét. au (*b*) de gu.

Remarks.—In Plate 49 the Samlandt arms are given with tinctures, which I have adopted in depicting the Samlandt and Emans arms. Willem Jacob van der Graaff was a native of Hussen, and married at Galle, on the 7th March, 1762, Agneta Clara Samlandt, daughter of Abraham Samlandt, the Commandeur of Galle, whose mother belonged to the Emans family.‡

Isaac Emans of Amsterdam was the Chief Pakhuismeester (Storekeeper) in Galle. His brother Abraham Emans married

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* See Plate 61, L.Z. † See Plates 33, 34, 35, 40, 48, 49, L.Z.

‡ See 2 C.L.R 365.

Anna Gertruida Francen, and had a son Abraham François, baptized at Ambalangoda, 28th October, 1701, who married at the Cape, Margrita Pietersz, whose mother was Margrita Barse.

As regards the Bierens family, there was one Dirk Bierens (*temp.* Vuyst, 1726–29 A.D.), and one Agneta Maria Bierens, who was married to Arent Pieter de Moor, Fiscal of Galle, 1737 A.D.

There was one Joan Christiaansz Toorzee, Captain and Constable Major, Colombo (Artillery), 1704 A.D.

Plate 14, L.Z., Colombo.

Translation.—Here rests the Hon. Cornelis van der Parra, during his life Koopman and Secretary of the Island of Ceylon. Born here in Colombo, 31st January, 1687. Died 6th April, 1719. Aged 32 years 2 months and 26 days. Also his daughter Susanna Magareta, wife of the Onderkoopman and Dispencier Daniel Schorer. Born 5th April, 1695. Aged 19 years 5 months and 20 days. As also her little daughter.

Arms.—Coupé: au 1 d'or à l'aigle de sa. au 2 d'azur au chev. d'arg. acc. de trois poires du même les queues en haut.

Crest.—Une aigle.

Remarks.—There is some mistake here in dates. The daughter could not have been born in 1695 if the father was born in 1687. Cornelis van der Parra was married to Gertruida Susanna Sparuyt. He had a son Rombout, baptized in Galle, 18th October, 1710. There is also a mistake in the date on the epitaph of the wife of Rombout van der Parra (Plate 93). The year 1607 is before the Dutch occupation. It may be that the Rombout referred to in Plate 93 is different from the Rombout baptized in Galle. The wife of the former was probably the daughter of Magnus Wichelman, Administrateur of Galle, and Susanna Durhee, who died in Galle, 3rd July, 1693.* The Durhee arms are found on the sinister impalement in the coat in Plate 94, L.Z., the birds,

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* See Plate 106, L.Z.

however, not being contourné as in Plate 106, the dexter impalement in Plate 94, L.Z., being the Van der Parra coat. Cornelis van der Parra and Gertruida Susanna Sparuyt had another son, Petrus Albertus, born in Colombo, 29th September, 1714 ; married, firstly, 30th September, 1733, Elizabeth van Aerden, and secondly, 11th June, 1743, Adriana Johanna Bake, widow of Anthony Guldenarm, Commandeur. She was the daughter of David Johan Bake, Extraordinary Councillor, Dutch Indies, and his wife Ida Dudde, and she died at Weltrevreden (Batavia), 18th February, 1787. Petrus Albertus entered the Company's service as a *Soldaat by de Penne* in 1728, and rose to the rank of Governor-General on the 15th May, 1761. By his first marriage he had three children, who predeceased him. His child by the second marriage was Petrus Albertus (born in Batavia, 1760, died 1783), a Judge in Batavia, who married there, 18th May, 1778, Catherina Breton, daughter of Hendrik Breton, Director-General, and Sara Maria van Oordt. Mr. van der Kloot gives the three charges in base as "acorns *or*." *

Plate 15, L.Z., Colombo.

Translation. — I take the following translation from *6 C.L.R. 96* :—

Hidden beneath this tombstone's shade
The mortal part of Rumpf is laid ;
Illustrious dust ; his spirit high
Now flits beyond the ethereal sky.
Sunk is the sun that gleamed so bright,
Changed is our day to "death's dark night."
Born to command and grief assuage,
The fondest hope of this our age.
Lo ! Ceylonese, lo ! here he lies :
When'er this stone confronts your eyes,
Grudge not the tribute of a tear
To parent worth that's buried here.

Born 21st November, 1673. Died 11th June, 1723.

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* "Gouverneurs-Generaals en Commissarissen." See Plates 93, 94, L.Z.

Arms.—Ec. aux 1 et 4, de gu. à une étoile d'or : aux 2 et 3 tranché d'or sur azur, à une rose, de six feuilles de l'un en l'autre, sur le tout, d'arg. à un bœuf ramp. de sa. langué de gu.

Crest.—Le bœuf iss. et affronté.

Remarks.—There was a George Everard Rumpf, who went out to the Indies under the name of Juriaan Rumpf, in the yacht "Muyden," December, 1652.* His son Paulus Augustus married Anna Wolkman, who, as widow, married Gerrard Leydekker, a widower, who had been married to a daughter of the Rev. François Valentyn, the Historian of the Dutch East Indies.†

Plate 16, L.Z., Colombo.

Translation.—Here lies the Jonkheer François van Beaumont. Aged 24 years 5 months and 7 days. Died 7th April, 1722.

Arms.—D'az. au vaisseau à l'antique d'or : au chef du même ch. d'un lion léopardé de sa.

Bourlet.—De sa. et d'or.

Crest.—Un lion iss. de sa. arm. et lamp. de gu. entre un vol d'or et de sa.

Lambrequins.—D'or et de sa.‡

Translation.—The resting place of three sisters : Constantia, born at Jaffna, 27th May, 1711 ; Adriana Henrietta, born at Jaffna, 27th April, 1712 ; Bitterina, born at Galle, 4th August, 1714. Died on the 16th and 25th April and 7th May, 1719; all children of Heer Arnold Moll, Opperkoopman and Ceylon's Chief Administrator, and Mejuffrouw Christina van Reede.

Arms.—Coupé : au 1 d' ... à trois taupes (Moll): au 2 d'arg. a deux fasces vivrées de sa. (Van Reede).

Crest.—La taupe.

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* See 2 C.L.R. 118.

† For pedigree of Rumpf see *Nederlandsch Heraut*, 1889, p. 83.

‡ See Plate 25, L.Z.

Remarks.—The arms should have been impaled. For the Van Reede and Moll arms see further, Plates 80, 97, 100, and 122. There was one Christoffel Moll, a native of Meindertshagen, born 1699, and died at Batavia, 12th January, 1751.*

Plate 17, L.Z., Colombo.

Translation.—Here lies buried Sara Maria Raket, wife of the Opperkoopman and Soldy-Boekhouder Adriaan Moens. Born at Jaffnapatnam, 13th May, 1734, and died in Colombo, 2nd April, 1768. Also her little daughter Adriana Maria, born in Colombo 25th April, 1765, and died there 3rd May, 1768.

Arms.—Dexter shield : De gu. au chev. d'or, acc. de trois trèfles d'arg. (Moens).

Sinister shield : D'arg. à la croix engr. de sa. acc. aux 1 et 4 d'une massacre de cerf du même (Raket).

The four coats round the shields are :—

Raket (already described).

Sandra.—Ec. aux 1 et 4 à la fasce de ... et de ... : aux 2 et 3 au lion de ... : sur le tout d' ... à une soleil.

Swinnas.—D'arg. à un cerf elancé broch. sur le fût d'un arbre.†

Verwyk.—De ... à une maison entre deux palmiers abordée par une route bordée par des arbres.‡

One Hubertus Sandra of Rotterdam came out to the Indies by the ship "Groenswaard," and was stationed at Negapatam as Onderkoopman.§

Plate 18, L.Z., Colombo.

Translation.—Here rests Pieter Libert Schmidt, Opperkoopman and Ceylon's Chief Administrator. Born at Utrecht, 15th March, 1723. Died 4th October, 1768.

Arms.—Coupé : au 1 d'az. à trois roses de ... : au 2 de gu. à trois étoilles d'arg. (5).

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* See also 2 C.L.R. 36[illegible].

† See Plates 10 and 96, L.Z.

‡ See Plate 89, L.Z.

§ See Plates 27, 52, 96, L.Z.

Plate 19, L.Z., Colombo.

Translation.—Here lies buried the Hon. Johannes Hertenberg, Extraordinary Councillor of Netherlands India, Governor and Director of the Island of Ceylon and the Dependencies thereof. Born at Oudkarspel, 16th April, 1668. Died at Colombo, 19th October, 1725. Aged 56 years 6 months and 4 days.

Arms.—De ... à la fasce de ... ch. de trois tref. de ... le milieu entre deux barres, et acc. de un cerf elancé en chef et trois collines au nat. en pointe.

Crest.—La tête et col de cerf.

Remarks.—Johannes Hertenberg was a native of Enkhuyzen, and came out in the ship "De Groote Visschery" as Third Surgeon in 1687. He was Commandeur of Galle in 1713.

Plate 20, L.Z., Colombo.

Translation.—Hereunder lies and rests the body of Jonkheer Diedrick Christiaan van Domburgh, only son of the Hon. Mr. Diedrick van Domburgh, during his life Governor and Director of the Island of Ceylon and the Dependencies thereof, and Mevrouw Euphemia Engelbert, spouses. Born in the Fort of Colombo, 4th October, 1734. Died 27th October, 1741. Aged 7 years 2 months and 23 days.

Arms.—Ec. aux 1 et 4 fascé d'arg. et de gu. de six pièces : aux 2 et 3 à trois saumons au nat. rangés en fasce et courbés vers senestre.

Crest.—Un vol.

Remarks.—Diedrick van Domburgh was a native of Utrecht, and came out to the Indies by the ship "Amsterdam." The title Mr. (*Meester*) shows that he was an *Advokaat.* He was Dissave of Mátara in 1721 and Commandeur of Galle in 1730 A.D.

Translation.—Here lies and rests Mejuffrouw Josina Jacoba van Wynbergen, wife of the Chief of Ponnecail,

Johannes Ferdinandus Crytsman. Born 22nd September, 1709. Died 19th December, 1736. Aged 27 years 2 months and 28 days.*

Remarks.—There was a Johannes Crytsman, Boekhouder, whose wife —— Hogerlind was born 24th July, 1684; died 28th June, 1707; and was buried in the Pettah Cemetery, Colombo.

Plate 21, L.Z., Colombo.

Translation.—To the memory of Jacob Hals, retired Captain of the Colombo Burgery. Born at Amsterdam, 6th May, 1668. Died at Colombo, 22nd February, 1735. Aged 66 years 9 months and 17 days. Also his grandson Johannes Adriaan Overbeek, born at Tutucoreen, 3rd February, 1725. Died at Colombo, 16th November, 1733. Aged 8 years 9 months and 13 days.

Arms.—Coupé : au 1 de ... à un ... couronné ... : au 2 de : ... à trois pointes de flèche en bas mouv. du coupé.†

Remarks.—Jacob Hals was married to Dominca Suarus, who died 28th June, 1720, aged 40 years and 9 days, and was buried in the Pettah Cemetery, Colombo.

Plate 22, L.Z., Colombo.

Translation.—To the memory of Jacobus Wilhelmus Balthazarus, Baron von Imhoff, the young son of Gustavus Wilhelmus and Catherina Magdalena Huysman. Born in Batavia, 20th March, 1735. Died at Colombo, 13th December, 1736. Aged 20 months and 23 days.

Arms.—Ec. aux 1 et 4 de gu. au lion mariné d'or (Imhoff): aux 2 et 3 parti de gu. et d'arg. à un annelet de l'un en l'autre (Gundelfinger) : sur le tout d'or, à l'aigle ep. de sa. surm. d'une couronne d'or. Trois cq. cour.

Crest.—L'aigle ep. surm. de la couronne.

Lambrequins.—A dextre d'or et de gu. à sen. d'arg. et de gu.

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* See Plate 73, L.Z.

† See Plates 55 and 56, L.Z.

The arms on the right of the shield are :—

Imhoff (already blazoned).

Boreel.—D'arg. au chev. de sa. acc. de trois cors de chasse du sec. au chef de gu. ch. d'un lion léopardé d'or.

Carel.—D'az. à un arbre d'or.

Lewezoven.—Lewezoven is a misprint for Levetzow, the arms of which family are : D'arg. à une herse sarasine de cinq pals aiguisés et de trois fasces renv. et soutenu d'un socle du même, le tout de gu.

Coymans.—Ec. aux 1 et 4 fascé-ondé d'arg. et d'az. au chef de gu. ch. de trois bes. d'or (Astry) : au 2 et 3 d'or à trois têtes et cols de bœuf de sa. (Coymans).

Trip.—De gu. à trois souliers à l'antique d'or.

Huysman.—Coupé : au 1 de gu. à deux fourches d'arg. passées en saut. au 2 d'arg. à un bœuf arrêté de gu.

Pelgrom.—Ec. au 1 d'arg. à l'aigle de gu. bq. et m. d'azur. : au 2 d'or à deux belettes ramp. et affr. de gu. au 3 d'arg. à trois roues de six rayons de sa. au 4 d'or à un pin. arr. de sin.

Waegberg.—D'or au lion de sa. cour. de ...

Everson.—D' ... à un canard contourné.

Hastely.—Ec. aux 1 et 4 de ... au chev. de ... acc. de trois étoilles de ... aux 2 et 3 de ... à cinq billettes de ... (2 et 3).

Pigeou.—D'arg. à trois fers de lance de gu.

Emougher.—Ec. aux 1 et 4 de...à deux epieux adossés : aux 2 et 3 de ... au chev. d ... acc. de trois fleurs-de-lis.

Hebert.—D'arg.*

Remarks.—Gustaaf Willem, Baron van Imhoff, was born at Leer on the Eems, 8th August, 1705, and was the son of Willem Hendrik, Baron van Imhoff, and Isabella Sophia Boreel. He entered the service of the Dutch East India Company as an Onderkoopman in 1725, was Governor of Ceylon in 1736, and Governor-General in 1741.

Imhoff was married about 1734 to Catherina Magdalena Huysman (who died in Batavia, 22nd July, 1744), daughter of Anthony Huysman, Director-General, and Johanna Catherina

* See Plate 82, L.Z., and 2 C.L.R. 29, 3 C.L.R. 374.

Pelgrom. The child of this marriage was Jacob Willem Balthazar. By Helena Pietersz* he had—

(1) Jan Willem, Baron van Imhoff, a Colonel in the Cavalry, born 3rd April, 1747, and married 19th October, 1766, Lady Christina Emerina Lewe, daughter of General Berend Lewe, of Aduard.

(2) Isabella Anthonia, Baroness van Imhoff, born 8th May, 1748.

(3) Wilhelmina Sophia, Baroness van Imhoff, born 23rd September, 1749; died before 24th October, 1750. All these three children were legitimized by the Prince of Orange.

One Johannes Huysman, Koopman, was born in Jaffna, 25th February, 1670, died in Colombo, 21st September, 1709, and was buried in the Pettah Cemetery, Colombo.

The third and fourth quarterings in the Emougher arms are the Baalde arms.†

Plate 23, L.Z., Colombo.

Translation.—Here rests the Opperkoopman and Chief Administrator of Ceylon, Richard van Minen. Born at Amersfoort, 6th November, 1706. Died 13th October, 1749. Aged 42 years 11 months and 7 days.

Arms.—Parti : au 1 d'or à la demi-aigle de sa. mouv. du parti : au 2 coupé : aux 1 et 2 de ... à trois boutons de rose.

Crest.—L'aigle.

Remarks.—Richard van Minen (Minnen) was married to Johanna Hester Mooyaart, daughter of Antony Mooyaart, Commandeur of Jaffna.‡

Plate 24, L.Z., Colombo.

Translation.—Here rests the body of the Hon. Gerrard Johan Vreland, Extraordinary Councillor of the Dutch Indies, Governor and Director of the Island of Ceylon, the Madura

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* See 2 C.L.R. 29.

† See Plate 102.

‡ See Plate 81, L.Z., and Plate 133.

Coast, and the further Dependencies. Born at Utrecht, 24th September, 1711. Died at Colombo, 26th February, 1752. Aged 40 years 5 months and 2 days.

Arms.—De ... à trois arbres terrassés, rangés en fasce.

Crest.—L'arbre.

Plate 25, L.Z., Colombo.

Translation.—Here expect a glorious resurrection the mortal remains of the late high-born Anna Henrietta van Beaumont, spouse of Joan Gideon Loten, Ordinary Councillor of the Dutch Indies, Governor of the Island of Ceylon and the Dependencies thereof. Born at the Cape of Good Hope, 13th November, 1716. Married at Batavia, 24th August, 1733. Died at Colombo, 10th August, 1755. Also her only daughter's little son, Jonkheer Albert Anthoni Cornelis van der Brughen. Born in Colombo, 24th March, 1754, and died 30th July, 1755.

Arms.—Parti : au 1 d'or à trois bourgeons de sin. posés 2 et 1, les tiges des deux du chef sortant du bourgeon en pointe (Loten): au 2 (Van Beaumont).*

Plate 26, L.Z., Colombo.

Translation.—Hereunder rest the bodies of the well-born Jonkvrouw Susanna Engelberta Schreuder, born in Surat, 30th April, 1743, and died in Colombo, 29th March, 1760; and Jonkheer Huybert Joan Schreuder, born in Colombo, 4th February, 1759, and died 29th May, 1759; also a newly-born infant daughter; children of Joan Schreuder, Extraordinary Councillor of the Dutch Indies, Governor and Director of the Island of Ceylon and the Dependencies thereof.

Arms.—D'az. à un faisceau de trois branches, deux en saut. et une en pal.

Crest.—La branche.

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* See Plate 16, L.Z.

Plate 27, L.Z., Colombo.

Translation.—Here lies buried Susanna Adriana Potken, wife of the Onderkoopman and first Clerk van Politie Adriaan Moens. Born at Colombo, 27th August, 1726. Died there, 24th May, 1761. Also their infant daughter Petronella Adriaana. Born in Colombo, 30th April, 1760. Died there, 14th September, 1761. And infant son Johannes Godefridus. Born at Colombo, 7th May, 1761. Died there, 9th December following.

Arms.—Dexter shield : Moens.*

Sinister shield : D'or à une marmite de ... (Potken).

Arms round the shields.

Potken.

Munts.—De ... à un pélican contourné avec ses petits dans son aire.

Ecoma.—De ... à une tête d'une femme acc. de quatre cloches de ...

Van der Putte.—De gu. à trois annelets d'or.†

Remarks.—Gerrard Willem Stork (from whom the Storks of Ceylon derive), Burgomaster of Oldenzaal, married in 1717 Agnita Potken, the daughter of Gabriel Potken and Agnita Muntz, the daughter of Balthazar Muntz and Aeyheydt Reinersz.

Plate 28, L.Z., Colombo.

Translation.—Here lies buried the well-born Heer Lubbert Jan, Baron van Eck, Lord of Overbeek, Extraordinary Councillor of the Dutch Indies, Governor and Director of the Island of Ceylon and the Dependencies thereof. Died here in Colombo, 1st April, 1765, who in person took for the Company the Kingdom of Candia, hitherto quite inaccessible and by nature impregnable, with its chief town, and put the King to flight.

Arms.—Parti de sin. et de gu. à la bande d'arg. broch. sur le tout.

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* See Plate 17.

† See Plates 8 and 27, L.Z., and 2 C.L.R. 37.

Lambrequins.—A dextre de sin. et de gu. à sen. de gu. et d'arg.

Supporters.—Deux lions d'or lamp. de gu. celui à dextre reg.

These same arms are to be seen over the entrance to the Star Fort in Mátara.*

Plate 29, L.Z., Colombo.

Translation.—On the 22nd April, 1777, was laid to rest here Gerrard Reynier de Cock, Onderkoopman and late Chief Storekeeper of Galle, who died on his way to the Netherlands.

Arms.—D'arg. à licorne contourné.

Crest.—Une couronne.

I have seen an impression from the seal of G. R. de Cock, and it is plain that the unicorn is depicted in this plate contourné from the arms being copied from the seal and not from the impression.

Translation.—On the 16th April, 1778, there was laid to rest here Henrietta Tugendreich, Baroness de Reder, the beloved wife of Cornelis de Cock, Opperkoopman and Dissave of the Lands about Colombo.

Arms.—D' ... à une roue de huit rayons.

Supporters.—Deux licornes.

Crest.—La roue.†

Translation.—On the 15th June, 1781, there was laid to rest here the body of Susanna Scharff, the worthy wife of the Rev. Henricus Philipsz.

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* See 3 C.L.R. 313 ; see Plate 132.

† See Plate 85, L.Z.

Arms.—De ... à un dextrochère, armé au nat. tenant un sabre.

Crest.—Le dex. armé.*

Remarks.—Henricus Philipsz was a Sinhalese. He was at first educated at the Seminary at Colombo and afterwards at Utrecht. Before going to Utrecht he stayed for a short time at Amsterdam, where on the 6th September, 1756, he was made *Proponent*, and on the 14th October, 1756, ordained a *Predikant* for Ceylon.†

Translation.—Here lies Judith Charlotte Lever, during her life wife of Martinus Mekem, Opperkoopman and Chief of Tutucoreen. Born at Bergen-op-Zoom on the 11th January, 1753. Died at Colombo, 9th September, 1782.

Arms.—Dexter shield : De ... à trois lévriers courants.

Crest.—Un oiseau (Mekem).

Sinister shield : De ... à la fasce de ... chargée de dix besants et acc. en chef de cheval courant et en pointe de six besants 3, 2, 1.

Crest.—Une tête et col de cheval (Lever).

Remarks.—Judith Charlotte Lever was perhaps a relation of Adrianus Cornelis Lever.‡

Plate 30, L.Z., Colombo.

Translation.—Here is laid to rest the body of the Hon. Mr. Iman Willem Falck, Ordinary Councillor of the Dutch Indies, Governor and Director of the Island of Ceylon and the Dependencies thereof. Born in Colombo in the year 1736, and died on the 6th February, 1785.

Arms.—De gu. à un faucon ess. d'or.

Crest.—Le faucon.

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* See Plate 32, L.Z.

† For further particulars about this Philipsz see De Bruyn's *Hervormde Kerk in Ned. O. I.*

‡ See Plate 35, L.Z., and 3 C.L.R. 383.

Plate 31, L.Z., Colombo.

Translation.—To the memory of the Hon. Iman Willem Falck, during his life Ordinary Councillor of the Dutch Indies, Governor and Director of the Island of Ceylon and the Dependencies thereof. Born in Colombo, 25th March, 1736. Died in Colombo, 6th February, 1785.

Remarks.—The popular fallacy,* that Governor Falck was born in Mátara, is disproved by these plates. His father Frans Willem died in Mátara a year after the Governor's death.†

Plate 32, L.Z., Colombo.

Translation.—Here rests till the general resurrection Catherina Bosch, during her life the beloved wife of the Rev. Christianus Camp. Born in Amsterdam, 12th December, 1747. Died here, 4th July, 1789, at the age of 41 years 6 months and 22 days.

Op Jesus 't vaste fondament
Haar hoop alleen was heengewent.‡

Translation.—And the Rev. Henricus Philipsz, Preceptor in the Reformed Church here. Born here in the year 1733, and, after 32 years' service as a *Predikant*, died 19th May, 1790.

Arms.—D' ... à une femme pass. au nat. au licorne pass. broch. sur le tout.

Crest.—Une tête et col de licorne.

Remarks.—This tombstone was evidently placed originally by the side of that of Susanna Scharff, but seems to have got misplaced.§

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* "Ceylon Quarterly Review," 1871, p. 92.

† See Plate 70, L.Z.

‡ The Dutch couplet is left untranslated.

§ See Plate 29, L.Z.

Translation.—Died 1793 A.D. Hereunder rest Corneial Reyneira Fretz *née* Van Sanden, Johanna Catherina Henrietta Meyer, and her daughter. Died 1806 A.D.

Remarks.—Cornelia Reyneira van Sanden was the wife of Dietrich Thomas Fretz, the last Commandeur of Galle.

Plate 33, L.Z., Colombo.

Translation.—Here rests Christina Elizabeth van Angelbeek, the well-beloved wife of Willem Jacob van de Graaff, Ordinary Councillor of the Dutch Indies and Governor of Ceylon. Born 30th January, 1756, and died 18th June, 1792.

Arms.—The Van der Graaf arms (dexter shield) have been already blazoned.*

Sinister shield : Coupé d'arg. sur un fascé-ondé de quatre pièces d'az. et trois de sa ; l'arg. ch. de trois hamecons d'or rangés en fasce, l'arête à sen.

Remarks.—Elizabeth van Angelbeek was evidently the daughter of Johan Gerrard van Angelbeek and Jakomina Lever.†

Plate 34, L.Z., Colombo.

Translation.—To the memory of Christina Elizabeth van Angelbeek, wife of Willem Jacob van de Graaff, Ordinary Councillor of the Dutch Indies, Governor and Director of Ceylon. Born 30th January, 1756. Died June, 1792.

Arms.—The arms are those of Van de Graaff and Van Angelbeek impaled. The dexter shield is wrongly depicted coupé, causing the coat to appear as if it were quartered. The crest is the charge on the canton in the dexter impalement. The Lever arms on the coat to the left are slightly different from those in Plate 35, L.Z.

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* See Plate 31.

† See Plates 13, 34, and 35, L.Z.

Plate 35, L.Z., Colombo.

Translation.—To the memory of Vrouw Jakomina Lever, wife of Johan Gerrard van Angelbeek, Ordinary Councillor of the Dutch Indies, Governor of Malabar. Born at the Cape of Good Hope, 18th August, 1732. Died in Colombo, 13th February, 1796.

Arms.—Dexter shield : Angelbeek.

Sinister shield : Lever. The Lever arms as depicted in Plate 29 have a fess charged with ten besants or billets and six (3, 2, 1) in base. The fess is not shown in this Plate, and in base there are fifteen besants (5, 4, 3, 2, 1).

Crest.—A pair of wings.

Plate 36, L.Z., Colombo.

Translation.—Hereunder rests Johanna Jacoba Palm, *née* Boogaard. Died 1822, in hopeful assurance of the eternal resurrection. We do not lament her loss as those without hope—this dear wife and good mother. Aged 38 years. Of Rotterdam.

Remarks.—Evidently the wife of the Rev. Mr. Palm. His son, Rev. Johan David Palm, was married to Louisa Anna Wells, and his daughter, Dorothea Frederica, to W. H. Clarke.

Translation.—Here rests the body of Albertus Cornelis de Vos. Born in Galle, 8th February, 1774. Died in Colombo, 30th July, 1827.

Remarks.—Son of Peter de Vos, Onderkoopman, Galle, and Magdalena Meyer.

Translation.—Hereunder lies buried Cornelia Henrietta Philipsz, daughter of the Rev. Henricus Philipsz, wife of Christoffel de Saram, 4th Maha Mudaliyár of the Governor's Gate. Died 9th April, 1824. Aged 59 years 4 months and 8 days.*

* See Plates 28 and 31, L.Z.

Remarks.—What relation Abraham Philipsz, Maha Mudaliyár, Colombo, 1783 A.D. (who married Plautina Pereira) was to Henricus Philipsz, the *Predikant*, I have not been able to ascertain. Most likely the Rev. Mr. Philipsz was the father. Mr. de Bruyn, *Hervormde Kerk in Ned. O. I.*, says at page 436 that there were in Ceylon three *Predikanten* of the name of Philipsz, two of them being father and son.

Plate 39, L.Z., Galle.

Translation.—Hereunder lies buried the body of Elizabeth Margarita Heynen, wife of the Gezaghebber of Galle, Iman de Jonge. Born at Batavia, 29th March, 1689, and died in the resthouse at Amblangodde, in the District of Galle, on the 4th December, 1735, and buried on the 5th. Aged 45 years 8 months and 5 days.

Remarks.—The *Navorscher* (Dutch Notes and Queries), XLI., p. 472, discusses this inscription thus :—" In Rietstap's "*Armorial Général*, second edition, there is found the Heynen " coat of arms blazoned : as Quarterly : 1. *or* a hind rampant " natural ; 2. argent three red roses (2 and 1) ; 3. *or* a red " eagle ; 4. azure a silver lion rampant. On the tomb of " Elizabeth Margarita Heynen (read Marg. Eliz.) [who " married (1) at Batavia, 5th May, 1707, Joan Fredrik Gobius, " who died at Malacca, 13th October, 1730 ; and (2) at Malacca, " 7th October, 1731, Iman de Jonge], depicted in the *Lapi*-" *darium Zeylanicum*, this coat is found, but with this " difference, that there (in the quarterings) there is no hind " but a stag, no three roses but three stars, no rampant but " a passant lion. We do not put much trust in the infalli-" bility of the engraver or copyist, the more so as in a " manuscript of the end of the 18th century the quarterings " of Ida Heynen are given thus : 1. *or* a rampant doe " (Heynen); 2. argent three (2 and 1) red roses (Van Nes); 3. " *or* a red eagle (Roman) ; 4. azure a silver lion armed and " langued red........." Elizabeth Margarita was the daughter of Johannes Heynen and Wilhelmina van Nes, Vrouw van

Vrayestein. Johannes was the son of Bartholomeus Heynen and Margarita Roman, daughter of the Rev. Johan Roman, of Batavia. Bartholomeus Heynen was *Predikant* in Galle from 1664 to 1679.

I find on an inspection of the tablet that the lion should be rampant.*

Plate 40, L.Z., Galle.

Translation.—Hereunder rests in peace the body of Joan van Velsen, during his life Commandeur of the City and Lands of Galle, Mátara, &c. Born at Leyden, 2nd July, 1655, and died 23rd November, 1709. Aged 54 years 4 months and 21 days.

Arms.—Same as Bierens.†

Translation.—Hereunder rests the body of Richardina Magdalena Doude, spinster. Born at Jaffna, 8th October, 1700, and died at Galle, 13th March, 1710.

Arms.—Parti : au 1 de ... à un dextrochère au nat. tenant un maillet : au 2 de ... à un rencontre de bœuf, à la bord. de ... ‡

Plate 41, L.Z., Galle.

Translation.—Hereunder lies buried Mattheus van der Spar, Koopman and late Administrator of the Galle Commandement in the service of the Dutch East India Company. Born in Jaffna, 19th May, 1730. Died in Galle, 24th November, 1806.

Hy die de Dood verwon
Zal onze leydsman Zyn
En gaven in der nacht
Een heldre Zonneschyn.

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* See Plate 83, L.Z. † See Plate 13, L.Z. ‡ See Plate 45, L.Z.

Arms.—In *3 C.L.R. 399* the arms are blazoned thus: "Party per pale. 1. per fess ... in chief a star (6), in base an anchor; 2. per bend sinister ... and two bendlets ..."

"The crest is a star, as in the arms."

Remarks.—The impalements are reversed in Plates 66 and 67, L.Z.

Translation.—To the memory of Clara Josina, beloved daughter of the Hon. Pieter Sluysken, Commandeur of the City of Galle and the Lands of Mátara. Born 14th May, 1776, and, to the bitter sorrow of all who knew her virtues, laid to her rest in the Lord on the 26th November, 1791, at the age of 15 years 4 months and 12 days.

Met luister kon haar harte en yder streele
En in haar vaders borst de diepste wonde heelen.

Arms.—D'azur à un lévrier assis contourné d'arg. coll. d'or.

Crest.—Le chien assis.

Remarks.—Pieter Sluysken was a native of Amsterdam, and was married to Susanna Petronella Charlotte Medeler, perhaps the daughter of Major Johan Hendrik Medeler and Gertruida Augustyn.

The greyhound is contourné, perhaps through a mistake (a very common one) of copying from a seal and not its impression.

Plate 42, L.Z., Galle.

Translation.—Hereunder lies buried Sandrina Reets, born in Utrecht, 7th April, 1668, the good wife of Jacobus van Outshoorn van Sonnevelt, Onderkoopman and Soldy-Boekhouder here, also retired Fiscaal of the Malabar Coast. Died 1st January, 1706. Aged 37 years 8 months and 29 days.

Arms.—Dexter shield: Ec. aux 1 et 4 de gu. à trois huchets d'arg. vir. et eng. d'or: (Outshoorn), aux 2 et 3 d'or, à trois fleurs-de-lis de gu. (Sonnevelt).

Sinister shield: De ... à un chien (?) ramp. (Reets).

Remarks.—The above parties had a son Alexander Nicolas, baptized in Galle, January, 1706, soon after the death of his mother. They made their will 11th January, 1703, wherein mention is made of their children Wilhelmina, Wilhelmina Henrietta, Peter Gabriel, and Maria Henrietta.

Translation.—Hereunder rests Livinia Goutier, wife of Aernout Valk, Koopman and Administrateur of the Galle Commandement. Born in Colombo, 2nd October, 1672. Died 13th May, 1708. Aged 35 years 7 months and 11 days.

Also their son Willem Valk, of Colombo. Born 18th June, 1695. Died 8th April, 1708. Aged 12 years 10 months and 20 days.

Remarks.—There was a Quiryn Goutier, who died 16th April, 1687, aged 28 years, and was buried at the Pettah Cemetery, Colombo.

Plate 43, L.Z., Galle.

Translation.—Here lies buried Ana Benjamina Gerritsz, widow of the Boekhouder, who died in Colombo, Johannes Barendsz. Died in Galle, 15th June, 1829. Aged 89 years. She awaits now the blessed resurrection of the dead.

Remarks.—There was a Maria Gerritsz (born Colombo, 12th June, 1664; died 3rd May, 1694), wife of the Skipper Jan de Wandel. She was buried in the Pettah Cemetery, Colombo.

Translation.—To the memory of Catherina Martheze, wife of Elias van Schuler. Born 2nd November, 1733. Died at Galle, 21st September, 1812. Her amiable qualities endeared her to all, and her early loss caused great grief to her inconsolable husband and young daughter.

Uxor amata Vale! Sed quis tua husta rigamus
Has lachrymas nostri pignus amoris habe.

Arms.—D'or à la fasce brét. et cont. brét. de sa.

Crest.—Une queue de paon au nat.

Supporters.—Deux griffons d'or.

Remarks.—The above are the Van Schuler arms. The year 1733 should be 1783. She was the daughter of Nicolas Bernardus Martheze and Francina Gerrardina Salomina Kersse. Elias van Schuler married afterwards Justina Susanna Augier.

Plate 44, L.Z., Galle.

Translation.—As a blessed remembrance of the late Rev. Jan Marten Wittensleger. Born in Galle, 13th May, 1763, and died 6th October, 1835.

He was appointed Deacon of the Congregation here in 1804, and Elder in 1812, and Proponent in 1823. In these offices he laboured for 28 years with untiring zeal, both in precept and example, combined with zeal and love, for the honour of God ; and in all his relations in life he excelled as a pattern to his fellow-beings, as a worthy man, a noble friend, true Christian, and loyal servant and follower of Jesus Christ, his God and Lord.

Erected by the Congregation at Galle, 1836.

Remarks.—The above is rather a free translation of the epitaph. Jan Marten was the son of Jan Wittensleger and Arembewellege Junesa, the latter evidently a Sinhalese lady.*

Plate 45, L.Z., Galle.

Translation.—Hereunder rests Don Theodose de Costa, paternal grandson of the late Banacke of blessed memory Don Joan de Costa, during his life Interpreter Mohotiar and Mohandiram of the Native Guard of the Commandeur of Galle. Born 18th May, 1672. Died 17th January, 1715. Aged 42 years 7 months and 30 days.

* See Plate 125.

Translation.—Hereunder rests the body of the well-born and virtuous Joanna Henrietta Collard van Lynden, during her life the worthy wife of Isaac Weyns, Opperkoopman and Dissave of Mátara, and second in the Galle Commandement. Born at Delft, 2nd October, 1670, and died 15th May, 1710. Aged 39 years 7 months and 13 days, having been married 21 years — months and 2 days.

Arms.—De ... à un rencontre de cerf.*

Plate 46, L.Z., Galle.

Translation.—Under this tomb there lies and rests in a coffin the dead body of Monica Roseboom, during her life wife of the Chief Surgeon Frederick Willem Winckelman. Born in Galle, 22nd October, 1688, and died 31st October, 1716.

Remarks.—Frederick Willem Winckelman was evidently the son of Magnus Winckelman, Administrator of Galle.†

Translation.—Hereunder lies the Rev. Gellius Geldesma, a servant of the congregation of Jesus Christ. Died 5th June, 1717. Aged 33 years and 2 months.

Remarks.—See *Valentyn* (Ceylon), vol. V., pp. 453, 457.

Plate 47, L.Z., Galle.

Translation.—Here lies buried Johanna van Rhee, wife of Cornelis Taay van Wezel, retired Gezaghebber of this Commandement and Dissave of Mátara. Born at Negapatnam, 19th May, 1668. Died 15th July, 1719. Aged 46 years 1 month and 26 days.‡

Arms.—The shield is evidently intended to be impaled, although not so depicted. Parti : au 1 (Van Rhee); au 2 coupé : au (*a*) de ... au lion de ... au (*b*) de ... à un ecusson de ... coupé, acc. de trois têtes et cols de chevrette.

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* See Plate 40, L.Z.

† See also Plate 93, L.Z.

‡ See Plates 9 and 10, L.Z.

Translation.—Here lies the body of the Honourable Jan Dondien, during his life Koopman and Sergeant of the Burgery at Galle. Born at Antwerp, 21st January, 1662. Died 25th December, 1718. Aged 56 years 11 months and 5 days.

Plates 48 and 49, L.Z., Galle.

Translation.—Here lies buried the Hon. Abraham Samlant, Commandeur of the City and Lands of Galle and Mátara. Born 12th August, 1713, and died here at Galle, 3rd May, 1766.*

Plate 49 contains his *wapenbord*, where the arms of Samlant, Emans, Lemmens, and Martiens are depicted.

Lemmens : De sin. à la fasce de gu. acc. de trois los. d'or.

Martiens : De sin. à trois roses d'arg.

The Emans arms here are slightly different from those in Plate 13, L.Z. Here it is the pillar erect that is abrazed by the falling portion of the other column.

Plate 50, L.Z., Galle.

Translation.—Here lies buried Maria Cornelia Schuttrup, wife of the Extraordinary Councillor of the Dutch Indies and Commandeur here, Arnoldus de Ly. Born in Galle, 30th November, 1742. Married in Colombo, 7th November, 1756. Died 5th August, 1785. A daughter of the late Opperkoopman and Dissave of Colombo, Pieter Elders Schuttrup, and Anna Maria van der Linden.

Blessed are the dead which die in the Lord.

Arms.—Dexter shield : Ec. aux 1 et 2 de sa. au chev. d'or acc. de trois fleurs-de-lis d'or : aux 2 et 3 parti : au (*a*) de sa. à deux étoilles (5) d'or : au (*b*) de gu. à une pignate d'arg. (De Ly).

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* See Plate 13, L.Z., and 2 C.L.R. 365.

Sinister shield : De ... à un tour à quatre étages, le premier et le quatrième montés de deux canons dirigés vers dex. et sen.

Remarks.—Although the tinctures are clearly indicated on the stone, the copyist has failed to reproduce them. According to him the entire shield is gules.

Plate 51, L.Z., Galle.

Translation.—Here rests the body of the late gallant Johan Fredrik Andrae, during his life Captain-Lieutenant of the Forces in Cochin. Born at Golding in Saxony, 5th March, 1752. Died here in Galle, 4th July, 1790, aged 38 years and 4 months. He had arrived in Galle shortly before his death, to return to his Fatherland in Europe, but the ever-changing circumstances of time have conspired to destroy this pleasant hope.

We must be prepared to die.

Arms.—St. André portant sa. croix.

Translation.—To the memory of Anna Jacoba van de Leur, the beloved wife of Cornelis Dionysius Krayenhoff, Opperkoopman and Gezaghebber of the City and Lands of Galle and Mátara, and, to the great grief of all who knew her virtues and good qualities, rested in the Lord, October, 1747.*

Arms.—Krayenhoff : D'arg. à trois corneilles de sa.

Van de Leur : Ec. aux 1 et 4 d'azur, à un cygne d'arg. aux 2 et 3, d'or à trois pots de sa.

Remarks.—There is a family of Krayenhoff van de Leur in Holland bearing the Krayenhoff arms as above.

Plate 52, L.Z., Galle.

Translation.—Here lies buried Adriana Swinnas, wife of the Chief Surgeon of Galle, Dirk Berghuys. Died 28th April, 1734. Aged 44 years 1 month and 20 days.

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* See Plates 5 and 84, L.Z.

Arms.—See Plates 17 and 96, L.Z., where Swutnas should be Swinnas.

Translation.—Hereunder rests the Assistant Nicolaas Brasser van Heuvel, youngest son of the Commandeur Nicolaas van Heuvel. Born 15th August, 1701, at Trincomalie, and died at Galle, 30th July, 1721.

Arms.—Coupé : au 1 parti : au (*a*) d'arg. à trois feuilles de nénuphar, au (*b*) d'arg. à deux fasces de gu. au 2 d'azur à une hure de sanglier d'arg. accostée de deux demi-ramures de cerf d'arg. en pals, celle à dextre ayant le sommet en bas.

Crest.—Un senestrochère tenant une flèche en barre.

Remarks.—The antlers, although found on the tombstone, are not depicted in the L.Z.*

Plate 53, L.Z., Galle.

Translation.—Here lies the body (swallowed up by death, but the soul being in Abraham's bosom) of Elizabeth Mooyaard. Died about 11 A.M. on Saturday, 21st October, 1747. Aged 47 years 5 months and 11 days, being, during her life, the wife of the Hon. Jacob de Jong, Commandeur of the City and Lands of Galle and Mátara.†

O zalige Matroon ! hier rust gy in den Heere
Die nu U misse moet die vind U weleens Weer,
Wanneer let lighaams stof verheerlykt rysen sal,
Dat is een iders lot By't Salig sterf geval.

Job 19, verse 25.

Arms.—Parti : au 1 coupé (*a*) de ... à deux tridents en saut. (*b*) de ... à un baril pose en fasce (De Jong), au 2 coupé : (*a*) de ... à un triton mouv. du coupé (*b*) de ... à lettres E. M. (Mooyaart).

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* See Plate 93, L.Z. † See Plates 81 and 58, L.Z.

Crests.—Les tridents (De Jong) et le triton (Mooyaard).

For an account of the Mooyaart family see *3 C.L.R. 183* and *4 M.L.R. 291.*

The arms of the Mooyaart are thus described in *3 C.L.R. 183 :* "Per fesse arg. and az., a mermaid issuing out of the fesse holding in her dexter hand a trident."

"*Crest.*—A mermaid, as in the arms."

The crest as depicted in L.Z. is a man seated on the helmet. It is not so on the stone, where it is a man (Triton ?) standing between a pair of wings with right hand held up.

Plate 54, L.Z., Galle.

Translation.—To the memory of Abraham van der Hart, during his life Shipmaster in the Service of the Hon. Company, having served last on the ship "St. Laurens." Born at Maaslandsluys in the year ... and died at Galle, 13th December, 1737. Aged — years — months and — days.

Arms.—De ... à un cœur percé de deux flèches en saut. les pointes en pointe.

Crest.—Le cœur.

Plate 55, L.Z., Galle.

Translation.—To the memory of Elizabeth Hals, wife of the Commandeur of Galle, Daniel Overbeek. Born 20th August, 1701. Died 28th October, 1738. Aged 37 years 4 months and 8 days.*

Remarks.—Elizabeth Hals was the daughter of Jacob Hals.†

Daniel Overbeek married secondly Gertruida Brengman. There was a Daniel Overbeek, the last Dutch Governor of Chinsurah, whose daughter was married to Alexander Wright, Lieutenant, East India Company. His son, William

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* See Plates 21 and 56, L.Z. † See Plate 21, L.Z.

Wright, born in Bengal, 17th January, 1830, and died 22nd May, 1889, was Professor of Arabic in the University of Cambridge.

Plate 56, L.Z., Galle.

Translation.—To the memory of Gesina Elizabeth Overbeek. Born in Tutucorin, 11th September, 1734. Died in Galle, 11th April, 1737. Aged 2 years and 7 months.*

Translation.—Hereunder lies buried the Captain of the Burgery here, Jacobus van der Horst. Died 11th September, 1737.

Arms.—Ec. en saut. aux 1, 2, 3, de ... à un trèfle de ... au 4 à une colombe volanté tenant en son bec une brin.

Crest.—Un demi Pégase.

Remarks.—The shield is depicted *or*, though it is not so engraved on the stone.

Plate 57, L.Z., Galle.

Translation.—Hereunder rests Joan Mattheus de Nieper. Born 15th December, 1742. Died 7th February, 1743.

Catherina Agnita Nieper. Born 1st July, 1743. Died 17th November, 1743.

Jacob Frederick Nieper. Born 2nd October, 1744. Died 23rd April, 1751, at the age of 6 years 6 months and 21 days.

Arms.—Coupé : au 1 à trois canettes rangées en fasce : au 2 de ...

Remarks.—Jan Willem Nieper, Surgeon-Major, Galle, married Johanna Isabel (died 13th July, 1754), daughter of Anike Fockes (died 13th October, 1740), Baas of the Ships' Carpenters. Father and daughter lie buried in the Pettah Cemetery, Colombo.

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* See Plates 21 and 55, L.Z.

Translation.—Here lies buried Anna Maria van der Linden, widow of the late Pieter Elders Schuttrup, Opperkoopman and Dissave of Colombo. Born in Batavia, 14th September, 1719. Died 7th October, 1764. A lady who, by her many virtues, endeared herself to God and man.

Blessed are the dead that die in the Lord.

Arms.—Schuttrup.*

Van der Linden.—De ... à un arbre.

Plate 58, L.Z., Galle.

Translation.—(*Hatchment.*) Died 13th April, 1758. Aged 50 years 2 months and 10 days.

Arms.—Gules, two arrows saltire-wise or, feathers arg., surmounted by a mullet of the second.

Crest.—A sinister hand holding an arrow, as in the arms.†

Remarks.—Supposed to be the arms of Casparus de Jong, Commandeur of Galle.

Plate 59, L.Z., Galle.

Translation.—To the memory of the well-born Theobald von Hugel, Colonel Commanding the Wurtemberg Regiment, Chevalier de l'ordre Militaire pour le Mérite. Born at Strasburg, 20th April, 1730. Died 30th January, 1800.

Arms.—Ec. aux 1 et 4 : de gu. à dix boulets de canon de sa. entasses 1, 2, 3 : aux 2 et 3, d'azur à un dextrochère, arm. de ... ganté de ... tenant une épée garnie de ... mouv. d'une nuée.

Supporters.—Dextre un lévrier d'arg. regard. coll. d'or.

Remarks.—In the arms as given in Plate 62, L.Z., 1 and 4 are depicted azure and 2 and 3 purple, but the latter should be gules, the lines in these quarterings being more vertical than diagonal on the stone. The hand is wrongly depicted sinister in Plate 59, L.Z. The arms as given in the *Armorial*

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* See Plate 50, L.Z. † See 2 C.L.R. 342, 6 C.L.R. 254.

Général are quarterly: 1 and 4 gules, a dexter hand arg. issuing out of clouds and holding a sword of the second; 2 and 3 arg, a rock isolé with three summits, the first higher than the second, and the second than the third, each surmounted by a tree on a terrasse sinople.

Plate 64, L.Z., Galle.

The only tombstones in English bearing coats of arms are those of John Henry Rabinel and his wife Anne, and of Baron Mylius, at Plate 75, L.Z. John Henry Rabinel was the son of Jean Davit Rabinel of Middelburg and Johanna Plautina de Moor.

The three sisters of John Henry, viz., Ariana Maria, Henrietta Maria, and Anna Cecilia, married George Shaw Brook, Edmund Sampson Waring, and Richard Brook, respectively, and descendants of them are living in Ceylon.

Arms.—Rabinel : Parti : au 1 de ... au lion de ... au chef de ... chargé de trois étoilles de ... au 2 de hermine à trois têtes de lion, au chef de ... ch. d'un lion passant gardant de ...

Plate 69, L.Z., Matara.

Translation. — Hereunder rests Pieter Christiaansz Bolscho, during his life Opperkoopman and Second in the Commandement of Galle. Born in the year 1649 at Odense in Denmark, and died here on the 17th November, 1709. Aged 60 years.

Translation.—Hereunder lies the body of Isaac Weyns, during his life Opperkoopman and Dissave of Mátara and Second in the Commandement of Galle. Born 15th May, 1655. Died 29th June, 1711. Aged 56 years 1 month and 16 days.

Plate 70, L.Z., Matara.

In praiseworthy remembrance of Mr. Frans Willem Falck, during his life Opperkoopman and Dissave of Mátara, a man pre-eminent in respect of birth, virtue, and other good qualities, snatched away in the bloom of his youth by death which spares no one. Born in Keulen, 7th December, 1710, and died at Mátara, 7th August, 1737. Aged 26 years 8 months and 1 day.

He rests here, awaiting the blessed resurrection.* Plate 30, L.Z.)

Translation.—To the memory of the newly-born daughter of the Opperkoopman and Dissave of Mátara, Jan Bauert. Born 22nd September, 1756, and died soon after.

Carl Jonas Tranchell. Born 11th February, died 8th May, 1793. Perhaps the son of Johannes Tranchell and Marie Magdalena Sievers.

The scroll round the epitaph is surmounted by a bird resembling a stork.

Plate 72, L.Z., Matara.

Translation.—Here lies buried Barbara Yongeling, wife of the Chief Surgeon, Lambertus Lambertyn. Died 26th December, aged 22 years, in the year 1686.

In the year 1687, 19th May, his son, Bernardus Lambertyn, died. Aged 3 months and 5 days.

Lambertus Lambertyn was a native of Deventer, and he married secondly Constantia, daughter of Anthony Mooyaart and Maria Durhee, and aunt of Antony Mooyaart, the Commandeur of Jaffna.†

Translation.—Here lies buried Gabriella der Trambly, wife of the Dissave, Abraham Shepmoes. Born in Colombo, 6th December, 1663. Died 4th October, 1703.

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* See Plate 30, L.Z.

† See Plates 53, 81, and 91, L.Z.

Plate 73, L.Z., Matara.

Translation.—To the memory of Johannes Ferdinandus Crytsman, Opperkoopman and Second in the Galle Commandement, also Dissave of these Lands. Born in Colombo, 17th April, 1709. Died 7th December, 1758. Aged 48 years 8 months and 20 days.

Beati sunt a Domino morientes.

Arms.—Coupé : au 1 parti : au (*a*) de ... à la aigle éployée de ... au (*b*) de ... à un cygne nageant : au 2 de ... à un homme au nat. tenant de sa main dex. un sabre (?) et de sa main senest. une bouquet (?).

Crest.—L'homme.

Plate 75, L.Z., Matara.

The Mylius arms are : Coupé : au 1 d'arg. à trois roses de gu. tigées et feuillées de sin., mouv. ensemble du coupé : au 2 d'or à la moitié inférieure d'une roue de moulin de sa. sans rayons. A la fasce de gu. br. sur le coupé.

The crest is not distinguishable, but should be a griffin.

Plate 77, L.Z., Trincomalee.

Translation.—Hereunder lies buried Monsieur Marth (van) Lengele, during his life Boekhouder in the Service and Second in the Fortress. Born at Jaffna, 16th August, 1691, and died 26th June, 1722.

Arms.—Ec. au 1 de ... au coq. de ... aux 2, 3, et 4 fascé-ondé de ... et de ... de 7 pièces.

Plate 79, L.Z., Jaffna.

Translation. — Here rests Commandeur Floris Blom. Born at Sardam, in the year 1651, on the 27th October, and died here on the 3rd July, 1694. Aged 42 years 8 months.

Arms.—D'azur à un cygne d'arg. bq. de gu. nageant sur une eau d'arg.

Crest.—Trois pl. d'aut.

The above arms are the first quartering of the arms of Pieter Florisse Blom, Vice-Admiral, seventeenth century, whose arms were: Coupé: au 1 parti: (*a*) d'azur à un cygne d'arg. bq. de gu. nageant sur une eau d'arg.; (*b*) d'arg. à un navire de trois mâts au nat. pavillionné de gu, la poupe à sen. soutenu d'une mer d'arg: au 2 de gu. à trois canettes d'arg. nageantes sur une mer du même.*

Translation.—Here lies buried Susanna Serringiers, wife of the Commandeur Floris Blom. Born at Haarlem, 26th February, 1669, and died at Jaffna, 12th February, 1693.

Fui quod es:
Sum quod eris.†

Plate 80, L.Z., Jaffna.

Translation.—Hereunder rests the body of Arnold Moll, during his life Extraordinary Councillor of the Dutch Indies and Commandeur of the Kingdom of Jaffnapatnam. Born at Batavia, 5th May, 1675. Died 10th February, 1729. Aged 53 years 9 months and 5 days.

For the Moll arms see Plate 16, L.Z.

Translation.—Here lies buried Laurens Pyl, a little son of the Commandeur Laurens Pyl. Born 4th May and died 22nd September, 1679.

Plate 81, L.Z., Jaffna.

Translation. — Hereunder rests the body of Elbregt Brengman, during his life Koopman and Administrator of Jaffna. Born in Galle, 4th March, 1685, and died 25th October, 1731. Aged 46 years 7 months and 21 days.

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* See Plate 5, L.Z.

† See Plates 5 and 79, L.Z.

Arms.—De ... à un homme au nat. portant un fardeau suspendu à le bout d'un bâton sur le dex. épaule.

Crest.—L'homme.

Remarks.—Elbreght was the son of Jan Brengman and Johanna Maria Baalde.

Translation.—Hereunder lies the body of the retired Commandeur of this place, Anthony Mooyaart. Born here, 6th December, 1698. Died 1st January, 1767. Aged 68 years and 25 days.*

Plate 82, L.Z., Jaffna.

Translation.—This tomb covers the remains of Gerrardus van Rhee, whose soul rests with God. Born at Negapatnam, 3rd August, 1670. Died 30th July, 1693. Aged 22 years 11 months and 27 days. During his life Boekhouder. †

Arms.—See Plate 9, L.Z.

Translation.—Hereunder lies young Marten, a lily of the house of Huysman, bewailed after a life of 4 months and 20 days. Died 1st September, 1672.

Remarks.—This epitaph is in verse.

Arms.—For the Huysman arms see Plate 22, L.Z.

Plate 83, L.Z., Jaffna.

Translation.—Hereunder lies buried the body of Johanna van Duuren, of Galle, during her life wife of the Opperkoopman and Second and Dissave of Jaffnapatnam, Gerrit de Vos Born 13th April, 1736. Died 16th December, 1773. Aged 37 years 8 months and 3 days.

Johanna van Duuren was the daughter of Dirk van Duuren, Surgeon, and Gertruida van den Brock. Gerrit de Vos was born in Negapatnam, being evidently the grandson

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* See Plates 23, 53, and 91, L.Z. † See Plates 9, 10, and 47, L.Z.

of Reynier de Vos, Dissave of Mátara and Commandeur of the return fleet (1695), and Dorothea Francen. Gerrit de Vos was himself Dissave of Mátara, 1770-74. He was Chief of Madura, 1767,* and married, as widower, Aletta Speldewinde, widow of the Chief Surgeon August Chr stiaan Gotter.

Arms.—Parti: au 1 d' ... à un arbre terrassé de .. (Van Duuren): au 2 d'or à un renard ramp. de gu. (De Vos) The impalements are here reversed.

Translation.—Death which leads us to heaven, it is an end of misery.

Here lies buried the body of Iman de Jong, of Zierikzee, during his life Commandeur of Jaffna. Died 13th December, 1737. Aged—years—months and—days.

Arms.—D'or à la fasce ondée d'azur, acc. de 8 étoilles (6), 2 et 3 en chef et 3 et 2 en pointe.†

Plate 84, L.Z., Jaffna.

Translation.—Here lies buried the body of Daniel Agreen, of Jongopping, in the Province Smaland, during his life Commandeur of Jaffnapatnam. Died 15th May, 1741. Aged — years — months and — days.

Arms.—De ... à un chev. de ... acc. de trois trèfles.

Crest.—Le trèfle entre un vol.

Translation.—Here lies buried Maria Sophia Wirmelskircker, during her life the beloved wife of the Opperkoopman, Second, and Dissave of this Commandement, Daniel de Bock. Born in Colombo, 16th April, 1743, and died here, 15th June, 1788. Aged 45 years 1 month and 29 days.

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* See 3 C.L.R. 206, 222.

† See Plate 39, L.Z.

Blessed are the dead which die in the Lord.

Arms.—Coupé : au 1 de ... à une église : au 2 de ... à trois marmites.

Plate 85, L.Z., Jaffna.

Translation.—Here lies buried Christopher Kleybert, born in Swynfort, during his life Opperkoopman and Dissave of the Kingdom of Jaffnapatnam. Died 7th January, 1745, at the age of 47 years 9 months and 3 days.

Arms.—D'arg. à une ancre : au chef d'azur ch. de trois trèfles malordonnés.*

Translation.—Fredrik Willem Baron de Reder, Major and Commandant of Jaffnapatnam. Buried 27th March, 1769.†

Plate 86, L.Z. Jaffna.

Translation.—Hereunder lies buried the body of Maria Sophia Ravens, of Jaffnapatnam, during her life wife of the Commandeur here, Jacob de Jong. Born in the year 1706, on the 24th June. Died in the year 1749, on the 23rd August, at 11 P.M. Aged 43 years 1 month and 29 days.

Arms.—Parti : ... au 1 de ... à la demi-aigle mouv. du parti : au 2 coupé (*a*) de ... à une corneille de ... contournée (*b*) de ... à un trèfle de ...

Crest.—La corneille cont. et ess.

These arms are the same as those of Carel Pieter Swensen, the first husband of Maria Sophia Ravens.‡

Translation.—Here lies the body of Anthonia van Pelt, wife of the Commandeur of Jaffna, Jacob de Jong. Born in Batavia, 22nd March, 1727. Died 12th October, 1751. Aged — years 6 months and 27 days.

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* See Plate 88, L.Z. † See Plate 29, L.Z.

‡ See Plate 130, where, however, the eagle is winged and as supporters griffins are depicted.

There also lies hereunder the little son of the aforesaid lady, Abraham Aarnoutsen. Born in Colombo, 21st May, 1747. Died 18th November, 1748. Aged — year 5 months and 27 days.

Arms.—See Plate 53, L.Z. (De Jong). See also Plate 88, L.Z.

Plate 87, L.Z., Jaffna.

Translation.—Under this tomb there rests the Rev. François van de Sande, during his life Minister of the Lord's Word of the Congregation of Jesus Christ. Died here, 6th April, 1705, having lived 39 years 7 months and 20 days. (See *Valentyn* (Ceylon), p. 416.)

Arms.—D'arg. à trois trèfles de gu.

Crest.—Le trèfle entre un vol de gu.

Translation.—Hereunder lies and rests Barta Beekering, wife of the Koopman and Administrator Augustus Augustin. Died 7th November, 1705, on a Saturday. Aged 56 years 6 months and 29 days.

Plate 88, L.Z., Jaffna.

Translation.—Here lies buried Jurriaan Potken, of Oldenzaal, during his life Koopman and Administrateur of this Commandement of Jaffnapatnam. Born 7th August, 1698. Died 28th April, 1737. Aged 38 years 8 months and 21 days.

Arms.—Ec. au 1 de ... à un pélican avec ses petits dans son aire (Muntz): aux 2 et 3 de ... à une marmite de ... (Potken): au 4 d'azur à un navire à trois mâts d'or, équipé et hab. du même, voguant sur une mer de sin. (Woutersz).

*Remarks.**—Jurriaan Potken was married to Hester Agatha Woutersz, daughter of Gualterus Woutersz, Commandeur of Jaffna. She afterwards married Johan Christoffel Kleybert.†

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* See Plate 27, L.Z. † See Plate 86, L.Z.

Translation.—Hereunder lies buried the body of Abraham Aarnoutsz, of Batavia, Opperkoopman and Dissave here. Born 26th December, 1703. Died 9th March, 1749, at 1.30 A.M. Aged 45 years 2 months and 11 days.

Arms.—The arms are difficult to blazon. They seem to be arg. 14, capital letters I ranged in fess 6, 5, and 3, the second and fourth and the second of the two lower rows being each surmounted by a billet gules.

Crest.—A peacock.*

Plate 89, L.Z., Jaffna.

Translation.—Swem Anderson, of Stockholm, during his life Commandeur of the Kingdom of Jaffnapatnam. Aged 60 years and 6 months. Died 22nd May, 1727.

The *arms* are the same as the Mooyaart arms (see Plate 81, L.Z.), only that the trident is held with the prongs directed downwards.

Crest.—A peacock's feather (?).

Translation.—Here lies buried Johanna Verwyk, wife of the Koopman and Cassier, Aarnout Wirman. Born in Jaffnapatnam, 25th January, 1738, and died 30th July, 1766. Aged 28 years 6 months and 5 days.†

Plate 93, L.Z., Mannar.

Translation.—Hereunder rests Juffrouw Henrietta Wichelman, wife of the Koopman Rombout van der Parra. Aged 21 years 2 months and 12 days. Died 26th May, 1697.

Arms.—Although no coat of arms is given here, that given at Plate 94, L.Z., belongs to this tombstone, the dexter impalement being the Van der Parra arms described in Plate 14, which see. As regards the sinister impalement, the same coat is on the tomb of Susanna Durhee, wife of Magnus Wichelman. The first and fourth quarterings are perhaps the Wickelman and the second and third the Durhee arms.

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* See Plate 86, L.Z.

† See Plate 17, L.Z., for the Verwyk arms.

Rombout van der Parra was *Opziender van den Canneel* (Superintendent of the Cinnamon Department).

Pieter Cornelius van der Parra was Governor-General *circa* 1763 A.D.*

Translation.—Anna van Cralen, wife of the Onderkoopman Nicolas van Heuvel. Aged 32 years. Died 12th December, 1687.†

Translation.—Here rests Susanna de Mey, wife of the retired Onderkoopman and Chief of Mannár, Pieter Bout Died 6th February, 1701. Aged 28 years 5 months and 2 days

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Plate 94, L.Z., Mannar.

Translation.—Hereunder rests Lambert van Buren, during his life Onderkoopman and Chief of this place. Aged 48 years 11 months and 12 days. Died 12 March, 169—.

Translation.—Hereunder rests Erasmus Hansz. of Jaffnapatnam, during his life Negotie Boekhouder here. Died 5th April, 17—. Aged 40 years — months and 1 day.‡

Plate 95, L.Z., Mannar.

Translation.—Hereunder rests Pierre de Salve, born in the house (*sic*) Killesteyn, at Lexmand, on the 17th March, 1705. During his life Onderkoopman and Chief of Mannár. Died 2nd March, 1750. Aged 44 years 11 months and 16 days.

Arms.—Coupé : d'arg. à la burèle de .. acc. de deux loups de sa. courants : à la bord. de gu.

Crest.—Trois pl. d'aut. d'arg.

Remarks.—Pierre de Salve was married to Johanna Catherina Meyer, who married 22nd July, 1750, as widow, Rev. Andreas Frederick Schultze.

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* See Plates 14 and 94, L.Z., and Plate 106. † See Plate 52, L.Z.
‡ See Plate 93, L.Z.

Translation.—Hereunder rests the newly-born son of the Ensign here, Jacob Vogelaar, by name Jacob Hendrik Vogelaar. Died April, 1750. Aged 2 months and 27 days.

Plate 96, L.Z., Mannar.

Translation.—Hereunder rests Magdalena Swutnas (*sic* Swinnas), wife of the Onderkoopman and Chief Jan Helfrig Raket. Died 21st October, 1744. Aged 39 years 2 months and 20 days.

Arms.—See Plates 17, 27, 52, and 96, L.Z. For Raket arms see Plate 17, L.Z.

Translation.—Here lies buried the body of Abraham Roos of Amsterdam, during his life Commandeur of Jaffnapatnam. Died 1st March, 1746. Aged 45 years and 7 months.

Arms.—Parti: au 1 d'arg. à un cerf ramp. de gu. au 2 de sa. à une rose d'or tigée et feuillée de sin.

Crest.—La rose.

Remarks.—The impalements are reversed here. One Pieter Roos, an Onderkoopman, lies buried in the Pettah Cemetery, Colombo.

Plate 97, L.Z., Negombo.

Translation.—Here lies buried Rutgaert Frederick Wagman, Ensign in the Service of this Company. Died 3rd June, 1686, at 6 o'clock in the evening.

Arms.—D'azur à un oiseau tenant en sa. dex. griffe une boule.

Lambrequins.—L'oiseau.*

Translation.—Anna van der Hool, aged 21 years, wife of Wilhelm ——.

Remarks.—See Plate 8, L.Z., where the arms are more correctly depicted.

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* See Plate 99 and 3 C.L.R. 343.

Translation.—Here lies Sigismundus Monitanier. Aged 12 years 11 months and ——. Died 22nd June (?) 5 years, 1613.

Translation.—Anna Constantia van Reede. Aged 6 months. Died 9th November, 1696.*

Plate 98, L.Z., Negombo.

Translation.—Here lies buried Elizabeth Herris, wife of the Lieutenant Lodewyck Stuart. Aged 22 years. Died 20th January, 1677.†

Translation.—Here rests the God-blessed Maria van Geel, wife of the Rev. Marc Mazius. Died 29th June, 1677. Aged 50 years.†

The Rev. Mazius was one of those who escaped from the massacre of the Dutch at Formosa in the year 1661.

The above are the Dutch epitaphs in the *Lapidarium Zeylanicum.* Mr. J. P. Lewis, C.C.S. (to whom I am indebted for sketches of Plates 99, 100, 101, 102, 103, 104, 105, 106, 112, 133, and 134), speaking of the mistakes in the *Lapidarium Zeylanicum*, writes† :—

In the upper inscription on Plate 97, for OUTGAERT read RUTGÆRT, and for DESECOMPY read DER-E-COMPE. The letters are quite distinct and easily read. Ludovici only gives the shield, but it is surmounted by a helmet and crest, the latter the same figure of a bird as in the shield.

The two centre inscriptions are here given for the second time ; for they had already appeared on Plate 8. A comparison of the two versions of each of these inscriptions will show how considerably they differ. I presume they are from tombstones in Colombo. The remaining inscription is more correctly—

ANNA CONSTAN
TIA VA - Reede OUf
6 M ⊙ de N 9 NOV 1696.

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* See Plate 16, L.Z., for arms.

† See 3 C.L.R. 343.

The letter like a Greek *theta* is the same as in inscription No. 4 above, and apparently stands for *obiit*. Ludovici represents this stone as the same size as the one depicted at the top of the Plate, but in reality it is about half the size.

Plate 98, upper inscription: for T. D. EER read D. EERB, for WARE read MARIA, for + VIS read HVIS, and for NARC read MARC; also for OVERLEEDEN read OVERLEDEN. Add at the end the sentence (which is cut in a running hand) "*Godt was en is. Haar Lot*" "God was and is her lot. (*Cf.* inscription No. 1 *ante.*) These two stones lie close together, and this inscription probably inspired the other. Perhaps this curious "holy text" is the composition of the "Predikant" Marc Mazius. I do not know what other origin it may have.

Lower inscription: for ELIZABET read ELISABET, for YAREN read YAAREN, and for 20 read 29.

If there is anything like the same proportion of mistakes in the rest of the inscriptions in the book as there is in these four, it decidedly requires revision. But probably these inscriptions at the end of the book were transcribed with more haste and less care than was the case with the majority.

Plate 99.*

Plate 99 contains a correct sketch by Mr. J. P. Lewis of the tombstone at Plate 97, L.Z.

Plate 100.*

Plate 100 contains corrected sketch by Mr. J. P. Lewis of epitaph at Plate 97, L.Z.†

Plate 101, Negombo.*

Translation.—Here rests the skilful Bernardus Manlych, of Bordeaux, during his life Chief Surgeon. Aged 55 years. Died on the 26th June, in the evening at 9 o'clock, in the year 1687.

God was and is his lot.

Arms.—Coupé: au 1 d'or au lion naiss. de sa. mouv. du coupé: au 2 de sa. à une demi-roue de moulin d'or, mouv. du coupé.

Crest.—Un lion iss. d'or.

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* See Plates. † See Plates 16, 18, and 97. L.Z.

Remarks.—The above blazon is from the *Armorial Général*, which, making due allowance for the rude engraving, agrees with the sketch.*

Plate 102, Galle.†

Translation.—Here lies buried Joanna Maria Baalde, wife of Mons. Willem Mode, Onderkoopman and Fiscaal of Galle. Born at Amsterdam, 2nd March, 1664. Died 21st October, 1697. Aged 33 years 7 months and 10 days.

Arms.—De sa. au chev. d'or acc. de trois fleur-de-lis d'arg.

Crest.—Une fleurs-de-lis d'arg.‡

Remarks.—This tombstone, together with those in Plates 103, 104, 105, 106, 123, 126, 127, were found in drains in the Fort of Galle, and are now lying outside the Dutch Church.§

Plate 103, Galle.†

Translation. — Here lies buried Burchard Coq, during his life Captain at Galle in the Service of the United Dutch East Indian Company. Aged 63 years. Died 25th July, 1662.

Arms.—De ... à une tour.

Crest.—Un tête et col de cerf.

Remarks.—See *1 M.L.R. 81* and Journal, R.A.S.C.B., vol. XI., No. 39, pp. 235 and 279, for an account of his embassy to the King of Kandy. He arrived in Ceylon by the "Huys te Swieten," and was killed in Galle by a soldier.‖

This tombstone was found on the site of the Groote Kerk, in Galle, opposite the writer's residence.

Plate 104, Galle.†

Translation.—This tomb covers the bodies of Willem Loquet, of Rynbeek, during his life Koopman and Administrator at Galle, born on the 16th June, 1659, and died

* See 3 C.L.R. 142.
† See Plates.
‡ See Plate 22 L.Z.
§ See Plate 22. L.Z., and 3 C.L.R. 374.
‖ See *Baldæus* (Choromandel, p. 145, and Ceylon, p. 134).

28th July, 1697 ; and of his wife, Maria Magdalena Cherpentier, of Wœrden, born on the 10th August, 1648, and died on the 25th March, 1699.

Arms.—Dexter shield: De ... à un rencontre de bœuf coll. Sinister shield: De ... à trois étoilles (6) de ...

Crest.—Le rencontre de bœuf.*

Plate 105, Galle.†

Translation.—Hereunder lies buried Maria Elizabeth van Leesten, wife of Rev. Nicolas Agota. Died 7th September, 1702. Aged 40 years.

Arms.—De gu. en chef à trois épées d'arg. garnies du même, les pointes en bas, deux passées en saut. et la troisième br. en pal, les lames se croisant près des pointes ; en pointe à une billette acc. de 8 fleurs-de-lis 3, 2, 3.

Crest.—Un tête et col de aigle.‡

Plate 106, Galle.†

Translation.—Gravestone covering the corpse of Susanna Durhee, wife of Koopman and Administrator of Galle, Magnus Wichelman. Died 3rd July, 1693. Aged 42 years and 3 months.

Arms.—Ec. aux 1 et 4 de ... à une tour : aux 2 et 3 de ... à trois oiseaux cont. et ess.

Crest.—La tour.

Remarks.—See Plate 93, L.Z., and 3 C.L.R. 375.

Plate 107, Galle.

HIER RUST
CARL CHRISTIAN CONRADI.
GEB. DEN 18 MAART 1802
EN OVERL. DEN 16 SEPT. 1804
KLEINZOON VAN DRET. THOM.
FRETZ.

---

* See 3 C.L.R. 374. † See Plates. ‡ See 3 C.L.R. 375.

Translation.—Here rests Carl Christian Conradi. Born 18th March, 1802. Died 16th September, 1804. The grandson of Diedrick Thomas Fretz.

Remarks.—Diedrick Thomas Fretz, of St. Goar, Hessen-Nassau, was the last Commandeur of Galle. By his second marriage with Gertruida Henrietta Bartels, of Tutucoreen, he had, among other children, a daughter, Maria Sophia, who married Carl August Conradi. These latter were the parents of Carl Christian.*

Plate 108, Galle.

HIER ONDER LEGD BEGRAVEN
HET LYK VAN DEN HEER
FREDRICK CHRISTIAAN VON
MULLERTZ GEBOOREN TE
KOLDING IN IUDLAND DEN
7 JANUARY 1753 IN LEEVEN
LIEUTENANT EN COMMANDANT
TE CRANGEANOOR OVERLEEDEN
OP DE 21 MAIY 1791 TER
STEDE GALE IN DEN OUDERDOM
VAN 38 JAAREN VIER MAENDEN
EN SES DAAGEN.
NOG RUST HY HIER NAARBY
HET LYK VAN ZYN ED
ELE BEIDE KINDEREN.

Translation.—Hereunder lies buried the body of Fredrick Christiaan von Mullertz. Born in Kolding, in Jutland, on the 7th January, 1753. During his life Lieutenant and Commandant at Cranganore. Died in the City of Galle, on the 21st May, 1791, aged 38 years 4 months and 6 days; but he lies here close to the bodies of both his children.

Remarks.—Fredrick Christiaan von Mullertz was married to Anna Catherina Elizabeth Medeler, and had a daughter, Gertruida Johanna Elizabeth.*

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* See 3 C.L.R. 375.

Plate 109, Galle.

TER GEDACHTENISSE
VAN WYLEN
MEJUF. JOHANNA ELISABETH
D'ESTANDAU
GEHUWD GEWEESTAAN DEN HEER
DIETERICH CORNELIUS FRETZ
GEBOREN TE GALE 18 AUGUSTUS
1789
OVERLEEDEN DEN 23 OCTOBER
1811
IN DEN OUDERDOM VAN 22 JAAREN
2 MAANDEN EN 10 DAGEN.

Translation.—To the memory of the late Johanna Elizabeth d'Estandau, married to Dieterich Cornelis Fretz. Born at Galle, 18th August, 1789. Died 23rd October, 1811. Aged 22 years 2 months and 2 days.

Remarks.—Dieterich Cornelis Fretz was the son of Dieterich Thomas Fretz, Commandeur of Galle, and Cornelia Reyniera van Sanden. Johanna Elizabeth d'Estandau was the daughter of Johannes Jacobus d'Estandau and Johanna Arnoldina Elizabeth de Bordes.*

Plate 110, Galle.

HIER LIGT BEGRAVEN
HET LYK
VAN DE
MENSCHLIEVENDE ECHTGENOTE VAN DEN
HEER JOSEPH ROSE
IN NAME
FRANSINA MARIA BAPTIST
GEBOREN DEN 4 NOVEMBER 1762
OVERLEDEN DEN 18 JULY 1833
IN DEN
OUDERDOM VAN 70 JAAREN 8 MAANDEN
14 DAGEN.

---

* See 3 C.L.R. 375.

Translation.—Here lies buried the body of the philanthropic wife of Joseph Rose, by name Fransina Maria Baptist. Born 4th November, 1762. Died 18th July, 1833. Aged 70 years 8 months and 14 days.

Remarks.—Fransina Maria was the daughter of Jacobus Baptist and Elizabeth de Almeda.*

Plate 111, Galle.

HIER RUST
HET LYK VAN WYLEN
DEN WELEDELE MAHHAFTE
HEER JEAN CHEVRET
CAPITEIN COMMANDANT DER
ARTILLERIE ALHIER GEBOREN
TE PARYS DEN 25 DECEMBER
EN OVERLEDEN DEN 4 OKTOBER 1791
IN DEN OUDERDOM VAN 57 JA
REN 9 MAANDEN EN 10 DAGEN

Translation.—Here rests the body of the late gallant Jean Chevret, Captain Commandant of the Artillery here. Born in Paris, 25th December, and died 4th October, 1791. Aged 57 years 9 months and 10 days.*

Plate 112, Galle.†

Translation.—Here *rest* the Hon. Adrianus Cornelis Lever, during his life Major and Commandant of the Military at Galle. Born at Breda, 2nd November, 1746. Died 18th August, 1789. Aged 42 years 9 months and 16 days.

Arms.—Dexter shield (Lever): See Plates 29, 33, and 35, L.Z.

Sinister shield : D'or à une ancre renv. de sa. accostée de deux coquilles du même (Oostdyk).

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* See 3 C.L.R. 375.

† See Plates.

Remarks.—Adriaan Cornelis Lever married Susanna Isabella Oostdyk, and predeceased her. She afterwards married at Galle, on the 13th December, 1789, Isaac de Miron du Rochat, of Neuchâtel, a Captain in the Meuron Regiment stationed here. Susanna Isabella was perhaps the daughter of Adriaan Oostdyk, the Opziender of the Galle Corle.

The old building opposite the **Amblangoda** resthouse was built by Adriaan Oostdyk, as the following inscription thereon shows :—

GEBOUWD DOOR
ADRIAAN OOST
DYCK ONDERK
EN OPS DER GA
LE CORLA 1750.

Translation.—Built by Adriaan Oostdyck, Onderkoopman and Superintendent of the Galle Corle, 1750.*

Plate 113, Galle.

HIER LEGT
MEJUFF JOHANNA GERRARDINA
KRYGER
HUISVROUW VAN DEN HEER
JOHANNES ANDREAS DE VOS
OVERLEEDEN DEN 20 JUNY
1815
IN DEN OUDERDOM VAN 43 JA
REN 9 MAENDEN EN 15 DAGEN
ZY VERWAGT NU DE ZALIGE
OPSTANDING VAN DEN DOOD.

Translation.—Here lies Johanna Gerrardina Kryger, wife of Johannes Andreas de Vos. Died 20th June, 1815. Aged 43 years 9 months and 15 days.

She now awaits the blessed resurrection of the dead.

Remarks.—Johanna Gerrardina Kryger was born in Tutucoreen, being the daughter of Cornelis Kryger and Maria Elizabeth Broeckman. Johannes Andreas de Vos was the

* See 2 C.L.R. 75, 3 C.L.R. 383.

son of Pieter de Vos, Onderkoopman, Galle, and Magdalena Meyer, daughter of Juriaan Meyer, of Lupke, and Elizabeth Pardon.*

Plate 114, Galle.

HIER RUSTEN
DE WAERDIGE OVERBLYF
SELS EENS BRAVE MANS
LUCAS AEMS IN LEEVEN CAPT
DER ZEE IN DIENST VAN HET NED
ERL, INDIASCH BEWIND EN
EQUIPAGIE MEESTER DESER PLAETZE
GEBOOREN TE AMSTERDAM DEN 25 MEI
OVERLEEDEN DEN 9 MAI 1805.

Translation.—Here rest the worthy remains of an honest man, Lucas Aems, during his life Sea-Captain in the Service of the Dutch Indian Government and Equipagie Meester (Master Attendant) of this place. Born in Amsterdam on the 25th May, and died on the 9th May, 1805.*

Plate 115, Matara.

HIER LEGT TER RUST
HET LYK VAN DEN OVERLEDE
NE JUFVROUW
ANTHONETTA MARIA THEODORA
DEYBERT
ECHTEGENOOT VAN DEN EERW HEER
J. S. R. EHRHARDT
GEBOOREN DEN 13 JUNY 1779
OVERLEEDT DEN 25 OCTOBER 1811
OUD ZYNDE 32 JAAREN. 4 MAANDEN
EN 22 DAGEN
ZALIGE ZYN DE DOODE DIE IN DEN
HEERE STERVEN VAN NU AEN ZO
ZEGT DE GEEST OP DAT ZY
RUSTEN MOGEN VAN HUNNEN
ARBEID.

---

* See 3 C.L.R. 383.

Translation.—Here lies at rest the body of the deceased Anthonetta Maria Theodora Deybert, wife of the Rev. J. S. R. Ehrhardt. Born 13th June, 1779. Died 25th October, 1811. Aged 32 years 4 months and 22 days.

Blessed are the dead which die in the Lord from henceforth : so saith the Spirit, that they may rest from their labours.

Remarks.—Rev. Ehrhardt married secondly Maria Carolina Hofland, who died at Colombo, 30th June, 1855, aged 70 years. He was a native of Langenzaltz in Turingen.*

Plate 116, Matara.

HIER RUST
CARL JOH. ELSENHANZ
ZOON VAN DEN LEIUTENANT
MILITAIRE HOLL. DIENST
CARL FRED ELSENHANZ
GEBOREN DEN 22 JAN 1784
OVERLEED 20 OCT 1810.

Translation.—Here lies Carl Joh. Elsenhanz, son of the Lieutenant of the Military in the Dutch Service, Carl Fred. Elsenhanz. Born 22nd January, 1784. Died 20th October, 1810.*

Plate 117, Negombo.

HIER LEYT
BEGRAVEN
F. M. VAN DER
BERGH GE
BOOREN OP
COLOMB : DEN
9BER EN OVR
LEED 12 7BER
95. ZYNDE OVDT
GEWE. 10 M. EN
3 DAGEN.

---

* See 3 C.L.R. 383.

Translation.—Here lies buried F. M. van der Bergh. Born in Colombo on the 9th November, and died on the 12th September, —95, aged 10 months and 3 days.*

Plate 118, Negombo.

HIER RVST. D
E ERBAREGODTZAL
MARIA. BRVTON HVIS
VR : VANDEN. SERGIAT
ANTHONI-VAN-HOL-
TEN-OVERL-DEN-
24-MEY-AN. 1695.

Translation.—Here rests the chaste, pious Maria Bruton, wife of the Sergeant Anthoni van Holten. Died 24th May, 1695.*

Plate 119, Negombo.

⊙ =BYT
ANTHONIE
VANDERVEEN
OVERL-DEN
24 MEY. A. 1695.

Translation.—Anthonie van der Veen. Died 24th May 1695.*

Plate 120, Negombo.

HIER LEYD BEGRAVEN
GELIERMIS CORNELIS
ZOON VAN DEN HEER
LEONARDUS THEODOSIUS
KOELMYER
GEB. DEN 10 FEBR. 1803
EN OVERLEEDEN OP DEN
7 JAN. 1813 IN DEN
OVDERDOM. VAN 9 JAREN
10 MAANDEN EN 17 DAGEN.

---

* See 3 C.L.R. 343.

Translation.—Here lies buried Geliermis (*sic*) (Gulielmus ?) Cornelis, son of Leonardus Theodosius Koelmyer (*sic*) (Koelmeyer ?). Born 10th February, 1803, and died 7th January, 1813, at the age of 9 years 10 months and 17 days.

Plate 121, Bentota.

ANDREAS AMABERT
VAN GRENOBLEIND DAUPHINERIV, DISER
LUYTENANT MILETAIREN
COMMANDANT TE PETIGELLE
OBIJT
DEN 18 JULIJ ANNO
DOM. 1764
TE
BENTOTTE
LEGT HIER BEGRAVEN
WAGT
OPD ZALIGE OPSTANDINGE.

Translation.—Andreas Amabert, of Grenoble in the Dauphinery, Lieutenant of the Military. Commandant at Petigelle. Died 18th July, 1764, at Bentotte. He lies buried here, and awaits the blessed resurrection.*

Remarks.—Over the entrance to the church there is the following inscription :—

FECIT
C : A : S
AD 1755

The letters C : A : S are perhaps the initials of Claude Antoine Scoffier.†

---

* Died of fever contracted on outpost duty at Pitigala in the interior of the present Bentoṭa-Walalláwiṭi Kóralé. He may have belonged to the French Regiment of Du Flos then under service with the Dutch.—B., *Hon. Sec.*

† See 1 C.L.R. 72, 6 C.L.R. 286.

Plate 122, Trincomalee.

TOT GEDAGHTENIS
VAN FRANCINA VAN
RHEDE TUEN VAN
MYDREGT DESEN
A°. 1687 : 24 APRIL
OP GEREGT.

Translation.—To the memory of Francina van Rhede, Lady of Mydregt. Erected on the 24th April, 1687.

Remarks.—The word TUEN is evidently a mistake for VROUW.

Forbes, in his account of Ceylon (vol. II., p. 4), gives an account of the suicide of this Dutch lady, and the reasons which induced her to kill herself ; and Sirr (vol. I., p. 112) relates substantially the same story. He also adds that " some descendants of the lady's family are still in Ceylon."

Whatever may be the Ceylon tradition, one Francina, Lady of Mydrecht, was the daughter of Hendrik Adrian van Rheede, Lord of Drakestein, afterwards, in 1680, Knight, " beleend met de Ridderhofstad Mydrecht, en beschreeven in de Ridderschap des Lands Van Utrecht." Serjeant-Major Hendrik van Rheede was in Ceylon in 1668, when in October of the same year he was sent with a force to " Ruanelle " to wreak vengeance on the King of Kandy, whose emissaries had suddenly attacked the Company's servants in the " Mendekaduale " and " Atakalan " Kóralés and driven them away. History records that he was successful. In 1687 we find him " Commissaris of the Coromandel Coast, " and it was during his tenure of office as such that Francina took the fatal leap. Pyl, who was Governor of Ceylon, is said to have, about this time, paid a visit to Van Rheede at Negapatnam to have a conference with him about Ceylon affairs, and the King of Kandy waxed very wroth that notice of this visit was not given him. It is even said that one Mattamagoddy Chitty was sent from Kandy to Jaffna with

orders not to return without Pyl, and the Chief Adigar besought him to come as soon as possible to Colombo, as matters had reached an alarming crisis.

Hendrick van Reede died on the 16th December, 1691, close to Bombay, on board the ship "Drechterland," on a voyage from Ceylon to Surat, and his embalmed body was buried close to Surat, in January, 1692. He was married to Johanna Schade, daughter of Johan Schade by his second wife, Elizabeth de Leeuw. His child by this marriage was Francina, who married (1) Captain Maurice Cæsar de la Baye (who died in Colombo, 14th February, 1693), and (2) 1694, Anthony Carel van Panhuys, who died January, 1714.*

Plate 123, Galle.

DE ERBARE EN DEUGDERYKE
JUFFROVW ELISABETH DE HEES
VAN VLISSINGEN HUYSVROVW
VAN DEN FISCAAL DANIEL
TISTE. MOEDER VAN EEN
KIND IS IN HAAR 42STE JAAR
OP DEN 5EN OCTOBER A° 1709
ZALIGH OVERLEDEN LEGHT
HIER BEGRAVEN EN VERWAGT
D : OPSTANDINGE
POSUIT SUPERSTES MARITUS.

Translation.—The honourable and virtuous Elizabeth de Hees, of Vlissingen, the wife of the Fiscaal, Daniel Tiste, mother of a child, is, in her 42nd year, on the 5th October, 1709, laid to her rest in the Lord. She lies here buried, and awaits the resurrection.

Her surviving husband has erected this tombstone.

Remarks.—See *1 M.L.R. 31.*

---

* See Kok's "Vaderlandsche Woordenboek," and 1 C.L.R. 112.

Plate 124, Galle.

HIER RUST JOHA
NA MARIA BAX
GEN : V : HERENTAL
STERF 28 : AUG : 1673
AUWT 10 MAANDE
EN 5 : DAGEN :

Translation.—Here rests Johana Maria Bax. Born at Herenthals. Died on the 28th August, 1673. Aged 10 months and 5 days.

Remarks.—This tombstone is not to be found in Galle now. It has probably been built into a well or a drain in the Fort of Galle.*

Plate 125, Galle.†

TOT GEZEGENT AANDENKING
HIER RUST HET LYK VAN DEN EERW HEER
JAN MARTEN WITTENSLEGER
PROPONENT VAN DE GEREF GEMEENTE TE GALE
GEB TE GALE DEN 13 MAY 1763
OVERLEDEN DEN 6 OCTOBER 1836
EN DE NAKOMELINGEN.

Translation.—As a blessed remembrance. Here rests the body of the Rev. Jan Marten Wittensleger, Proponent of the Reformed Church at Galle. Born at Galle, 13th May, 1763. Died on the 6th October, 1836. And the descendants.

Remarks.—See Plate 44, L.Z.

Plate 126, Galle.

HIER ONDER LEYT
BEGRAVEN DEN E
MICHIEL ADRIAENS
IN SYN LEVEN COOP
MAN EN ADMINISTRATÉUR
VAN GALE IS IN DEN
HEERE GERUST DEN
5 ...... ANNO

* See 2 C.L.R. 116.

† Cemetery.

Translation.—Hereunder lies buried the Hon. Michiel Adriaens, during his life Koopman and Administrator of Galle. Laid to his rest in the Lord on the 5th ... in the year ...

Arms.—The arms are difficult to blazon. In chief there are ranged, fess-wise, a sun in his splendour, a scroll (?), a hand issuing out of clouds holding a wreath (?). In base a human figure holding in his (?) dexter hand a flag and in the sinister a ball surmounted by a crescent decrescent, *i.e.*, the ends of which are directed sinister. The human figure is riding on what appers to be a flying griffin. The crest is a dog (?)

Remarks.—This and the next tombstone had been built into a drain close to the new gate of the Fort of Galle.

Plate 127, Galle.

HIER LEGT BEGRA
VEN DEN EERWAER
DIGEN GODZALIGE
HOOGH GELEERDEN
HEER LOURENTIUS
HEMLING IN ZYN LEVEN
BEDIENAER DES HEYL
EUANGELIUMS IN DE
GEMEYNTE CHRISTI
TOT GALE OVERLED
DEN 13 9BER A° 1684
OUT 42 JAREN

Translation.—Here lies buried the Rev. blessed and most learned Lourentius Hemling, during his life a servant of the Holy Gospel in Christ's Church. Died at Galle, 13th November, 1684. Age 42 years.

Arms.—De ... à une tour.

Crest.—La tour.

Supporters.—Deux lions.

Remarks.—See *De Hervormde kerk.* (De Bruyn), pp. 49, 233, 268.*

Plate 128, Galle.

HIER OND
JOHANNES
VAN NIEUWCAS
BOEKHOUDE.
DIENST DERED
OBYIT 6 JANUA
ZYNDE 28 JAAR
DAGEN

Translation.—Hereunder (lies) Johannes .... of Newcastle, Boekhouder.........(in the) Service of the (Hon. Company). Died 6th January.........(Aged) 28 years......... days.

Remarks.—This and the next tombstone were found built into a well in Chandos street, in the Fort of Galle. The stones have been cut down to size, causing a part of the inscription to disappear.

Plate 129, Galle.

ER RUST
CHRISTIAAN
MULHOUSEN
DERKOOPM
E COMP EN
GO DES CEY
ERNEMEN
6 JANUARY
LEDEN DE
A° 1704 4 OUD
AREN EN

---

* See Plate 126.

Translation.—Here rests Christiaan Mulhousen, (Onderkoopman) of the Hon. Company and ...... of the Cey(lon) Government. (Born) 6th January. (Died on the ......) in the year 1704. Aged ...... years and ...... *

Plate 130, Galle.†

Translation.—To the memory of the Hon. Carel Pieter Swensen, Sea-Captain and Equipagie Meester (Master Attendant) of Galle. Born in Colombo, 9th June, 1691. Died at Galle, 13th December, 1739. Aged 48 years 6 months and 4 days.

Arms.—See Plate 86, L.Z.

Remarks.—This tombstone was found in the old Dutch Cemetery in the Fort, and is still lying there. I am indebted to Mr. H. E. H. Hayes, of the Public Works Department, for the photograph of the stone. Carel Pieter Swensen was married to Maria Sophia Ravens, who married secondly Jacob de Jong.‡

Plate 132.

Other Dutch inscriptions§ :—

On a stone in the resthouse verandah, **Tangalla** :—

DOORMYN
OP. GEBOUWT
A. J. 1774.

Translation.—Doormyn, built in the year of Jesus 1774.

Remarks.—The Dutch always chose names for their houses indicative of comfort, content, and happiness on the part of the owner.‖ Doormyn means "out and out mine," or "my very own."

---

* See Plate 128. † See Plate. ‡ See Plate 86, L.Z.
§ See 2 C.L.R. 116. ‖ See 2 C.L.R. 356.

On the old building used as "Up-country Chambers" behind the **Colombo** Club :—

T. SCHOOL
VAN
COLPETTY.
TOT VOORT PLANTING
VAN DE WAAR CHRIS-
TELYKE GEREFOR-
MEERDE RELIGIE.

Translation.—The school of Colpetty. For the propagation of the true Christian Reformed Religion.

On another stone in the same building :—

A° 1734
OP NIEUW GEBOUWT
IN HET
JAAR 1746.

Translation.—1734 A.D. Rebuilt in the year 1746.

Name of a house at **Jaffna** ; also of a house at Magalla, **Galle** :—*

VRYHEID BLYHEID.

I.e., "Freedom and joy."

Over the door of the Dutch Church in **Matara** there is a stone bearing this inscription :—

DANIEL BURNAT
OPPERCOOPMAN EN
DESSAVE
ANNO 1767.

The date 1767 (which Ludovici in *Lapidarium Zeylanicum* erroneously gives as 1706) is probably the date when it was repaired or rebuilt, for it seems to be much the same building, as to plan and appearance, as the church depicted in Heydt's plate.†

---

* See 2 C.L.R. 357. † See 3 C.L.R. 311.

In **Matara**, facing the river approach, is a picturesque gateway, access to which was given by a drawbridge. The pediment is the shape of an arc with its chord. The space within the pediment is decorated with the monogram of the Dutch East India Company in an ornamental setting. Over the door, carved in wood, are the arms of Governor van Eck.* Over this again is the name of the fort, which was called after the Governor who built it, "Redoute van Eck." Below the coat of arms are his initials, L. I. V. E., and the date 1763. Although the material is wood, this piece of work is in perfect preservation. The keystone of the arch bears this inscription on the outside :—

A DE LY
OPPERKOOPMAN EN
SECUNDE VAN HET
GAALS COMMANT
MITSGS DESSAVE
DESERLANDEN
A° MDCCLXV.

and on the inside :—

I. H. LAPPE
CAPN.
I. I. ENTINK LT.
INGENIEURS
EXEC.

Translation.—A. de Ly, Opperkoopman and Second in Command at Gaal (Galle), as well as Dessave of these Districts, MDCCLXV. A.D. Built by I. H. Lappe, Captain, I. I. Entink, Lieut., Engineers.

Arnoldus de Ly was Commandeur of Galle shortly afterwards. J. H. Lappe was a "Captain-Engineer" at Galle in 1766.† "On the 12th of July [1770] the Captain-Engineer of Trinkenemale, Jan Hendrik Lappe, met with an unhappy death while riding on horseback. Seeing the low branch of a tree he bent down, and thinking he had already passed

* See Plate 28, L.Z. † See 2 C.L.R. 365 and 412.

under it he sat up again too soon, thus striking his head heavily against the tree, and so he fell from his horse and broke his head."*

Plate 133, Calpentyn.†

Translation. — Hereunder lies buried Johanna Hester Mooyaart, wife of the Onderkoopman and Chief of Calpetty, Richard van Minnen. Born in Jaffna, 29th March, 1726, and laid to his rest in the Lord 27th April, 1741. Aged 15 years and 28 days.‡

Arms.—Ec. au 1 (Mooyaart, see Plate 53, L.Z.) aux 2 et 3 (Van Minnen, see Plate 23, L.Z.) au 4 (Woutersz, see Plate 88, L.Z.).

Plate 134, Calpentyn.†

Translation.—Here lies buried Benjamina Hannecop, spinster. Born 3rd October, 1667. Died 28th May, 1686.§

Arms.—D'or à trois croiss. de sa.

Remarks.—There was a Cornelis Hannecop, an Assistant, buried in the Pettah Cemetery, Colombo. He was born in Jaffna, 16th September, 1674, and died 14th January, 1702. The arms on his tombstone are: D'or à trois croiss. de sa. 1 et 2.

Crest.—Un vol antique.

Plate 135, Colombo.‖

HIER ONDER RUST'T LEYK VAN D'
E. IOANNES STRICK ZAL.
IN ZYN LEVEN ONDERCOOPMAN
EN CASSIER ALHIER GEBOREN
IN'T JAAR 1668 DEN 15 SEPTEMB.
EN OVERLEDEN DEN 7 JUNY 1708
OUD 40 JAREN 9 MAANDEN
EN 25 DAGEN.

---

* Extract from the *Nieuwe Nederlandsche Jaarboek* of 1771, published in the *Ceylon Examiner.* See 3 C.L.R. 311.

† See Plate.

‡ See 4 M.L.R. 292 and Plates 10, 23, 53, 72, 81, and 80, L.Z.

§ See 4 M.L.R. 292.

‖ Pettah Cemetery.

Translation.—Hereunder rests the body of Johannes Strick, of blessed memory, during his life Onderkoopman and Cassier here. Born in the year 1668, on the 15th September, and died on the 7th June, 1708. Aged 40 years 9 months and 25 days.

Arms.—D'arg. à trois merlettes de sa.

Crest.—Une tête et col d'autruche d'arg.

Remarks.—See Plate 11, L.Z.

Plate 136, Kalutara.

BALTHAZAR ROCK
GEB. TE MOSBACH
A° 1751 D' 10 APRIL
OVERL: 1803 D' 10 JUNY.

Translation.—Balthazar Rock. Born at Mosbach, 10th April, 1751. Died 10th June, 1803.

Remarks.—Balthazar Rock was probably the father of Maria Rock, who was married to George Wendt.

The tombstones of the following, with the epitaphs in Dutch, are in the Pettah Cemetery, **Colombo** :—

1. Johannes Strick. (See Plate 11, L.Z.)
2. Hogerlind, wife of Johannes Crytsman.
3. Cornelis Gerrard van Kempen. Born in Amsterdam, 1566. Died 9th January, 1688.
4. Jan Weemayer, Gunpowder-maker. Died 1st April, 1686.
5. Willem Meyer. Died 6th December, 1678. Aged 60 years.
6. Maria Gerritsen. (See Plate 43, L.Z.)
7. Jacob Pieter Loos, of Amsterdam, Baas of the Company's Armoury. Born 15th February, 1655. Died 8th January, 1702.
8. Cornelis Hannecop. (See Plate 134.)
9. Hendrik Jacob van Toll. (See Plate 8, L.Z.)

10. Ottilia Borman (wife of the Boekhouder Dirk Brummer). Born in Colombo, 16th June, 1700. Died 1721.

11. Johannes Huysman. (See Plate 22, L.Z.)

12. Maria Pieck.

13. Catherina Elizabeth Wolff, wife of J. H. Reeckerman. Born 21st March, 1773. Died 11th February, 1803.

14. Pieter Roos. (See Plate 96, L.Z.)

15. Johanna Boddens.

16. Rachel Brouwers, wife of the Surgeon Jan Jacob Brunek. Died 24th January, 1691. Aged 24 years 9 months and 11 days.

17. Elias Marius Kakelaar, Koopman. Born 18th March, 1652. Died 20th April, 1680.

18. Quiryn Goutier. (See Plate 42, L.Z.)

19. Anike Fockes, Isabel Fockes, Jan Willem Nieper. (See Plate 57, L.Z.)

20. Dominca Suarus.

Jacob Hals. (See Plate 21, L.Z.)

21. Jop. Coutier.

22. Seraphina Sansony. Born 9th December, 1801. Died 29th March, 181—.

23. Thomas van Vliet. (See Plate 7, L.Z.)

24. Coenraad Dier, Captain of the Burgery. Born in Neurenburg, 6th February, 1655. Died 26th July, 1702.

25. Anna Gevertsz (wife of the Assistant Pieter Hoflant). Died 26th June, 1720. Aged 29 years 5 months and 27 days.

26. Petronella Elizabeth Marselis. Born 24th December, 1816. Died 7th March, 1818.

Christina Elizabeth Ketel, wife of Johannes Marselis, Born 15th November, 1783. Died 15th October, 1827.

ERRATUM.

Page 215, line 15 from top, *for* " on the Dutch Churches " *read* " in the Dutch Churches."

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Plate 100.

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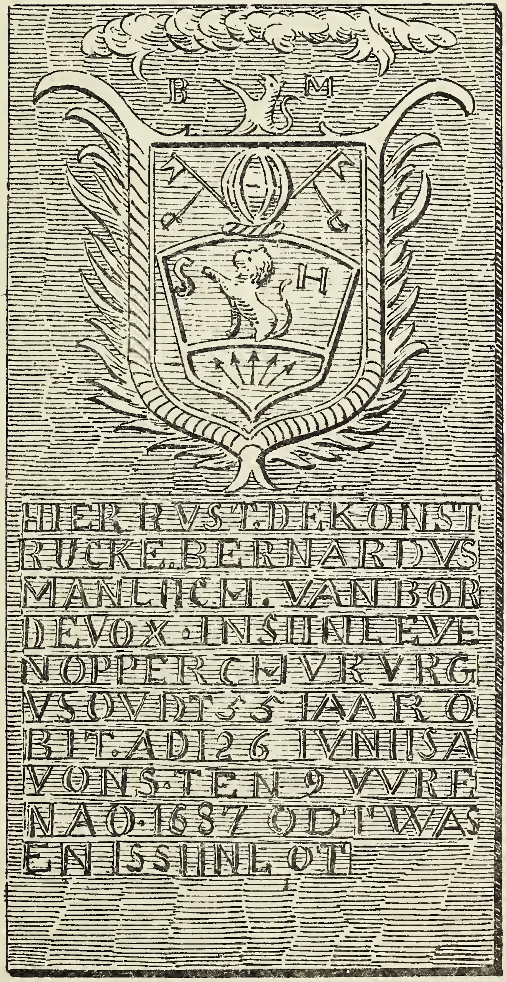
Plate 101. (Negombo)



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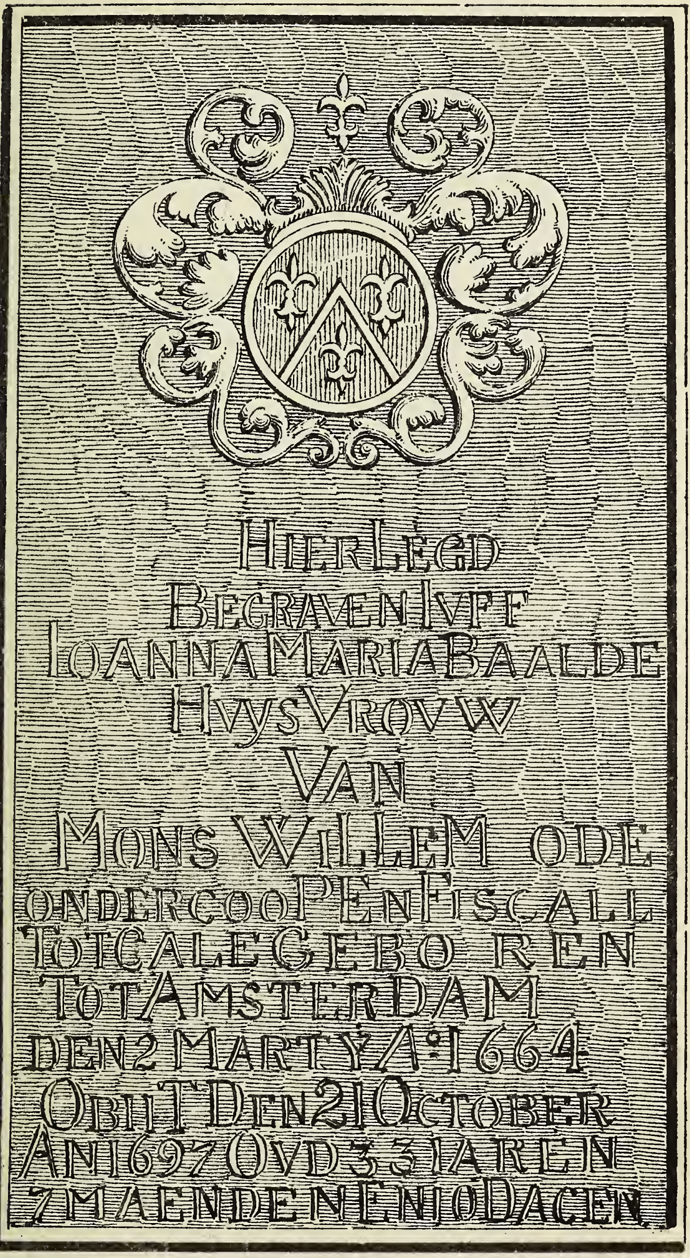

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Plate 103. (Galle.)

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Plate 104. (Galle)

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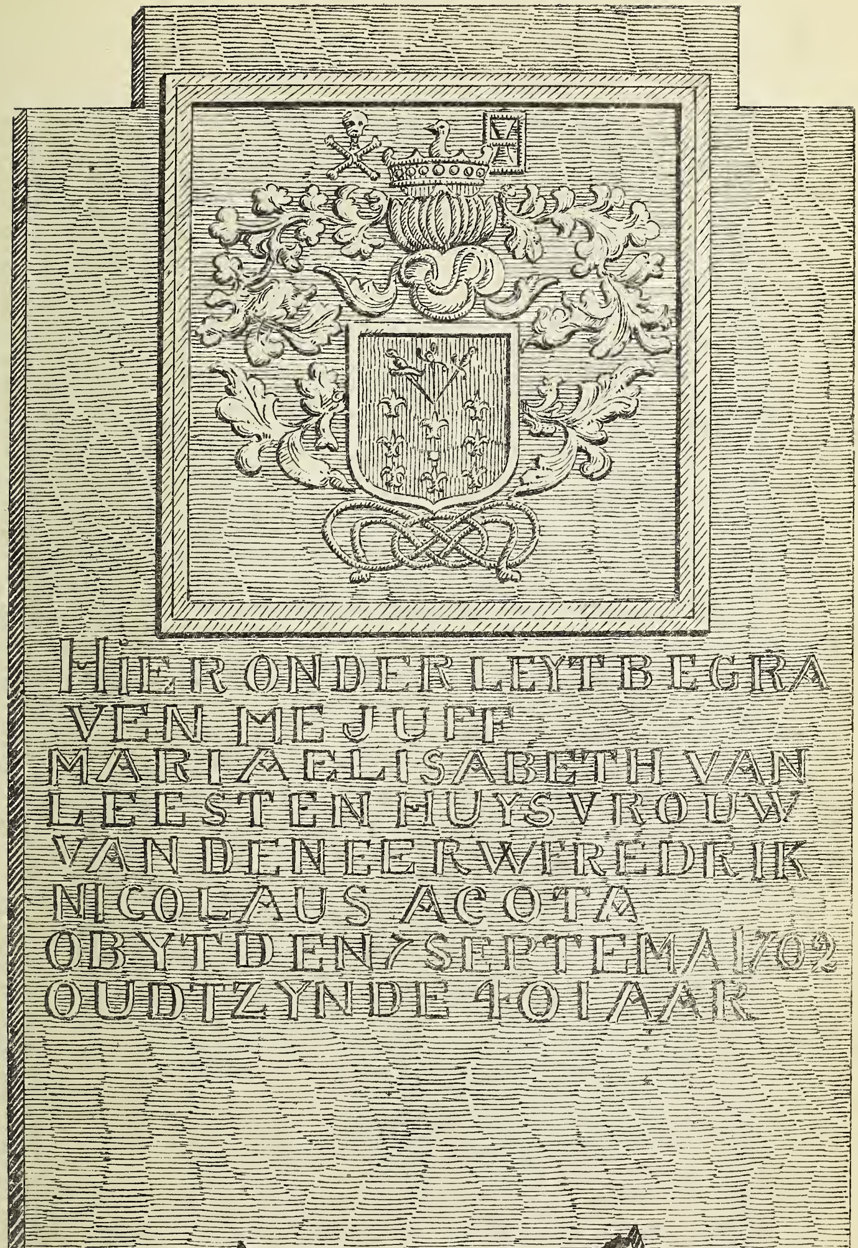
HIERONDERLEYTBEGRA
VEN MEJUFF
MARIAELISABETH VAN
LEESTEN HUYSVROUW
VANDENEERWFREDRIK
NICOLAUS ACOTA
OBYTDEN 7 SEPTEMA 1702
OUDTZYNDE 40 IAAR

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Plate 106 (Galle.)

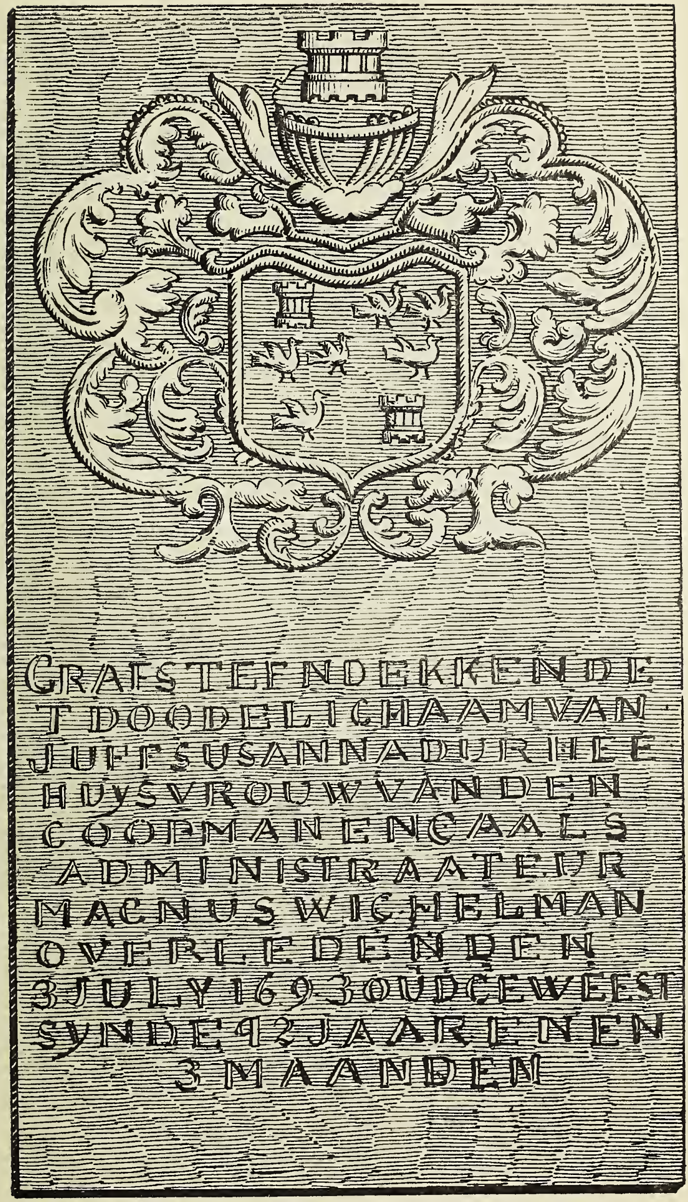

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Plate 112. (Galle)

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Plate 130. (Galle)

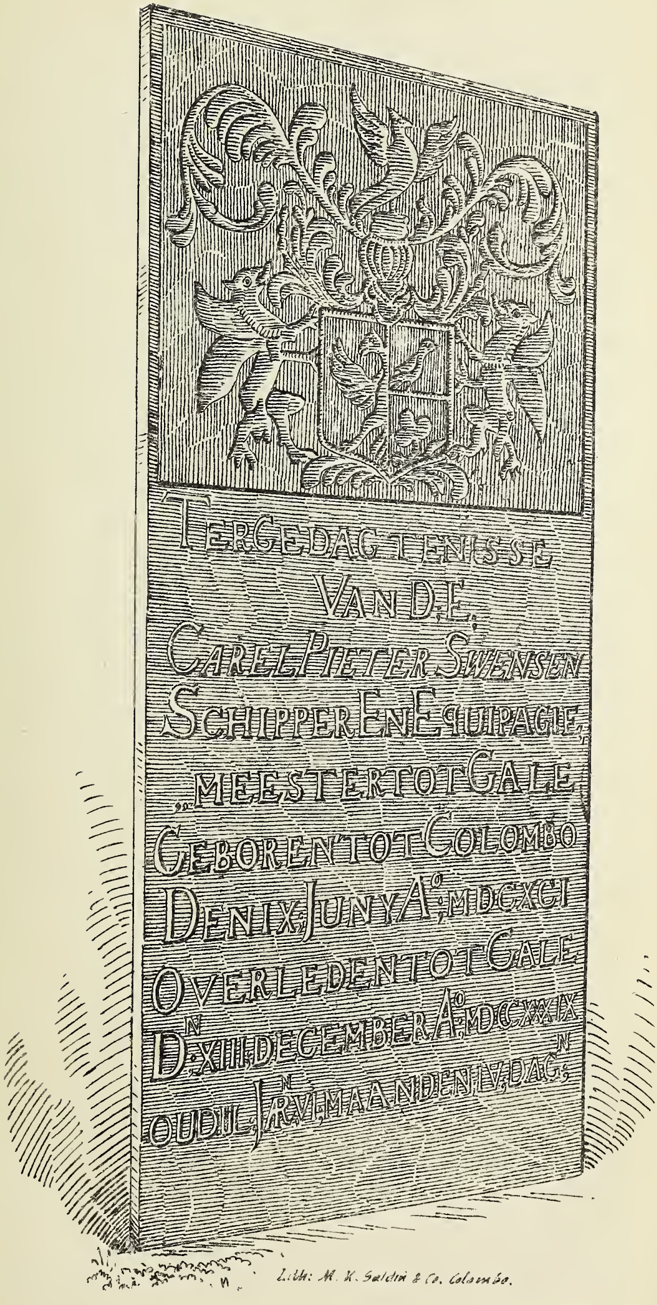

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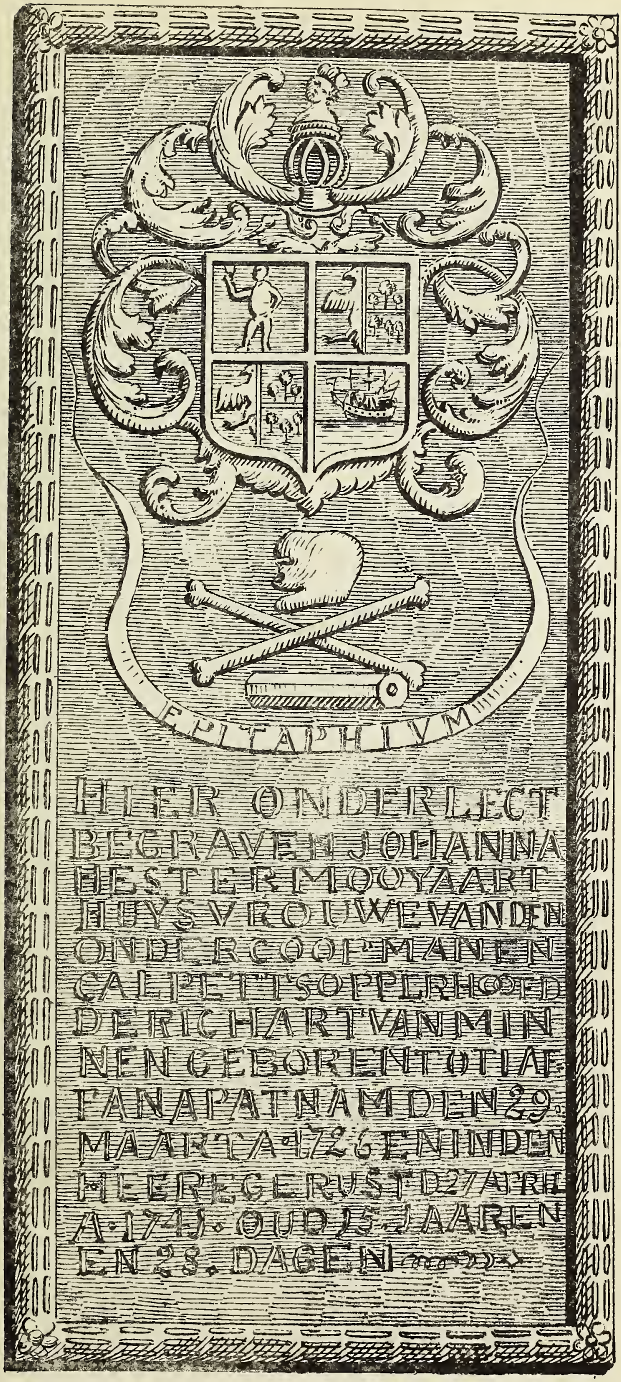
Plate 133 (Calpentyn)



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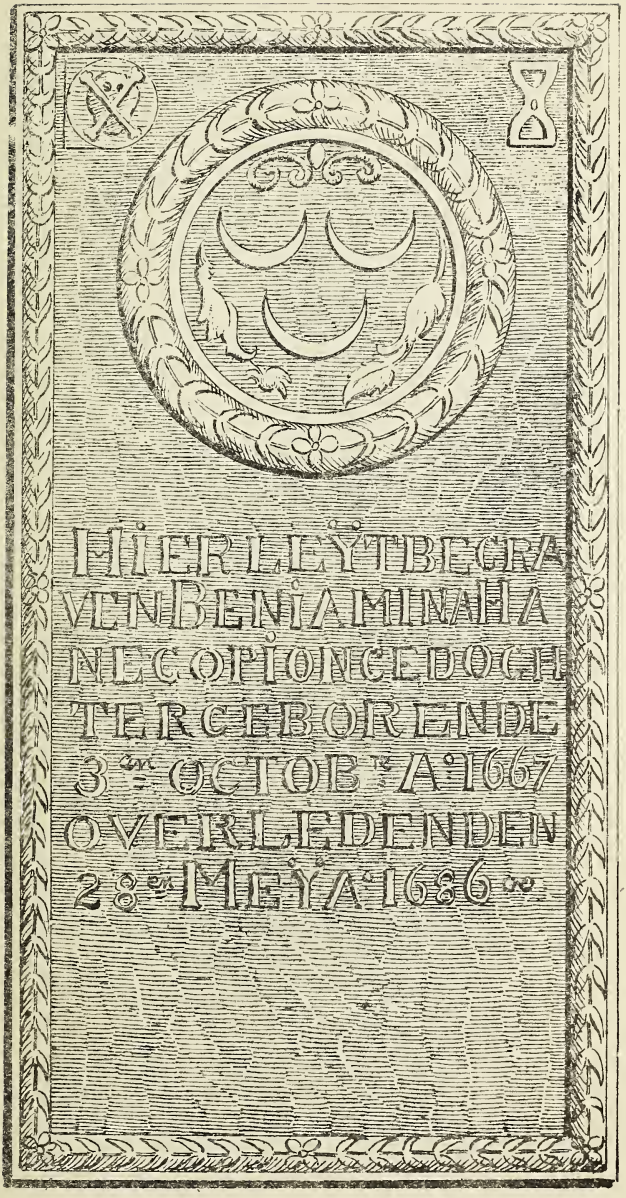
Plate 134 (Calpentyn)